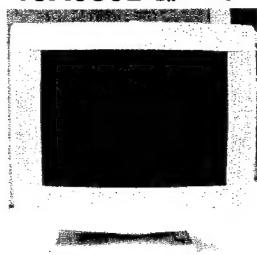


# 17", 19" Auto scan Color Monitor

Service  
Service  
**Service**



17A580BQ/74C  
19A580BQ/74C



MANUAL 6604  
PCEC Model: 17A580 BQ11  
19A580 BQ11  
Chassis: CM5800  
File: 1997: 6604

DDC/Audio/Power saving/Tilt correction

# Service Manual

Horizontal frequencies  
30 - 95 kHz

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REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

## SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

**CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.**



# PHILIPS

**IMPORTANT SAFETY NOTICE**

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company\*\* Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various **CAUTIONS** and **NOTICES** which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these **CAUTIONS** and **NOTICES ARE NOT EXHAUSTIVE**. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

**\*\* Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.**

**WARNING**

Critical components having special safety characteristics are identified with a **▲** by the Ref. No. in the parts list and enclosed within a broken line\* (where several critical components are grouped in one area) along with the safety symbol **▲** on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

**\* Broken Line** 

FOR PRODUCTS CONTAINING LASER :

**DANGER-** Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

**CAUTION-** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**CAUTION-** The use of optical instruments with this product will increase eye hazard.

**TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.**

# Hex Data of DDC1/2B (17A580BQ/74C)

17A CM5800

3

```
*****
ddc_v17.chk
*****

Vendor/Product Identification
  ID Manufacturer Name      : PHL
  ID Product Code          : 1107
  ID Serial Number         : 12345678
  Week of Manufacture      : 38
  Year of Manufacture      : 1997

EDID Version, Revision
  Version                  : 1
  Revision                 : 1

Basic Display Parameters/Features
  Video Input Definition   : Analog Video Input
                           0.700V/0.300V (1.00Vpp)
                           without Blank-to-Black Setup
                           Separate Sync
                           Composite Sync
                           Sync on Green
                           no Serration required

  Maximum H Image Size    : 30 cm
  Maximum V Image Size    : 23 cm

  Display Transfer Characteristic: 2.850
                           (gamma)

  Feature Support (DPMS)  : Standby
                           Suspend
                           Active Off
                           RGB color display

Color Characteristics
  Red X coordinate        : 0.625
  Red Y coordinate        : 0.340
  Green X coordinate      : 0.285
  Green Y coordinate      : 0.605
  Blue X coordinate       : 0.150
  Blue Y coordinate       : 0.065
  White X coordinate      : 0.283
  White Y coordinate      : 0.298

Established Timings
  Established Timings I   : 640 x 480 @60Hz (VGA,IBM)
                           640 x 480 @75Hz (VESA)

  Established timings II  : 800 x 600 @75Hz (VESA)
                           1024 x 768 @75Hz (VESA)
                           1280 x 1024 @75Hz (VESA)

  Manufacturer's timings : 1152 x 870 @75Hz
                           (MacII,Apple)

Standard Timing Identification #1
  Horizontal active pixels : 640
  Aspect Ratio             : 4:3
  Refresh Rate             : 70

Standard Timing Identification #2
  Horizontal active pixels : 800
  Aspect Ratio             : 4:3
  Refresh Rate             : 85

Standard Timing Identification #3
  Horizontal active pixels : 1024
  Aspect Ratio             : 4:3
  Refresh Rate             : 85

Standard Timing Identification #4
  Horizontal active pixels : 1280
```

```
Aspect Ratio              : 5:4
Refresh Rate              : 85

Standard Timing Identification #5
  Horizontal active pixels : 1600
  Aspect Ratio             : 4:3
  Refresh Rate             : 75

Detailed Timing #1
  Pixel Clock (MHz)       : 108.000
  H Active (pixels)       : 1152
  H Blanking (pixels)     : 352
  V Active (lines)        : 900
  V Blanking (lines)      : 43
  H Sync Offset (F Porch) (pixels): 16
  H Sync Pulse Width (pixels) : 64
  V Sync Offset (F Porch) (lines): 2
  V Sync Pulse Width (lines) : 8
  H Image Size (mm)       : 300
  V Image Size (mm)       : 225
  H Border (pixels)       : 0
  V Border (lines)        : 0
  Flags                   : Non-interlaced
                           Normal Display, No stereo
                           Digital Separate Sync
                           Positive V Sync
                           Positive H Sync

Monitor Descriptor #2
  Serial Number           : CM58C12345678

Monitor Descriptor #3
  Monitor Name            : TYPHOON17A

Monitor Descriptor #4
  Min. Vt rate Hz         : 50
  Max. Vt rate Hz         : 160
  Min. Horiz. rate kHz    : 30
  Min. Horiz. rate kHz    : 95
  Max. Supported Pixel not specified

Extension Flag            : 0

Check sum                 : 5e(hex)
```

## Hex Data of DDC1/2B (17A580BQ/74C)

|         |         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|---------|
| 0: 0    | 1: ff   | 2: ff   | 3: ff   | 4: ff   | 5: ff   | 6: ff   | 7: 0    |
| 8: 41   | 9: c    | 10: 7   | 11: 11  | 12: 4e  | 13: 61  | 14: bc  | 15: 0   |
| 16: 26  | 17: 7   | 18: 1   | 19: 1   | 20: e   | 21: 1e  | 22: 17  | 23: b9  |
| 24: e8  | 25: 0   | 26: b9  | 27: a0  | 28: 57  | 29: 49  | 30: 9b  | 31: 26  |
| 32: 10  | 33: 48  | 34: 4c  | 35: 24  | 36: 43  | 37: 80  | 38: 31  | 39: 4a  |
| 40: 45  | 41: 59  | 42: 61  | 43: 59  | 44: 81  | 45: 99  | 46: a9  | 47: 4f  |
| 48: 1   | 49: 1   | 50: 1   | 51: 1   | 52: 1   | 53: 1   | 54: 30  | 55: 2a  |
| 56: 80  | 57: 60  | 58: 41  | 59: 84  | 60: 2b  | 61: 30  | 62: 10  | 63: 40  |
| 64: 28  | 65: 0   | 66: 2c  | 67: e1  | 68: 10  | 69: 0   | 70: 0   | 71: 1e  |
| 72: 0   | 73: 0   | 74: 0   | 75: ff  | 76: 0   | 77: 43  | 78: 4d  | 79: 35  |
| 80: 38  | 81: 43  | 82: 31  | 83: 32  | 84: 33  | 85: 34  | 86: 35  | 87: 36  |
| 88: 37  | 89: 38  | 90: 0   | 91: 0   | 92: 0   | 93: fc  | 94: 0   | 95: 54  |
| 96: 59  | 97: 50  | 98: 48  | 99: 4f  | 100: 4f | 101: 4e | 102: 20 | 103: 31 |
| 104: 37 | 105: 41 | 106: a  | 107: 20 | 108: 0  | 109: 0  | 110: 0  | 111: fd |
| 112: 0  | 113: 32 | 114: a0 | 115: 1e | 116: 5f | 117: ff | 118: 0  | 119: a  |
| 120: 20 | 121: 20 | 122: 20 | 123: 20 | 124: 20 | 125: 20 | 126: 0  | 127: 5e |



# Hex Data of DDC1/2B (19A580BQ/74C)

19A CM5800

5

Display data channel :DDC1/2B

## Vendor/Product Identification

ID Manufacturer Name : PHL  
ID Product Code : 1109  
ID Serial Number : 12345678  
Week of Manufacture : 36  
Year of Manufacture : 1997

## EDID Version, Revision

Version : 1  
Revision : 1

## Basic Display Parameters/Features

Video Input Definition : Analog Video Input  
0.700V/0.300V (1.00Vpp)  
without Blank-to-Black Setup  
Separate Sync  
Composite Sync  
without Sync on Green  
no Serration required

Maximum H Image Size : 34 cm  
Maximum V Image Size : 25 cm

Display Transfer Characteristic (gamma) : 2.760

Feature Support (DPMS) : Standby  
Suspend  
Active Off  
RGB color display

## Color Characteristics

Red X coordinate : 0.625  
Red Y coordinate : 0.340  
Green X coordinate : 0.285  
Green Y coordinate : 0.605  
Blue X coordinate : 0.150  
Blue Y coordinate : 0.065  
White X coordinate : 0.283  
White Y coordinate : 0.298

## Established Timings

Established Timings I : 640 x 480 @60Hz (VGA,IBM)  
640 x 480 @75Hz (VESA)

Established Timings II : 800 x 600 @75Hz (VESA)  
1024 x 768 @75Hz (VESA)  
1280 x 1024 @75Hz (VESA)

Manufacturer's Timings : 1152 x 870 @75Hz  
(MacII, Apple)

## Standard Timing Identification #1

Horizontal active pixels : 800  
Aspect Ratio : 4:3  
Refresh Rate : 85

## Standard Timing Identification #2

Horizontal active pixels : 1024  
Aspect Ratio : 4:3  
Refresh Rate : 85

## Standard Timing Identification #3

Horizontal active pixels : 1280  
Aspect Ratio : 5:4  
Refresh Rate : 85

## Standard Timing Identification #4

Horizontal active pixels : 1600  
Aspect Ratio : 4:3  
Refresh Rate : 75

## Detailed Timing #1

Pixel Clock (MHz) : 202.500  
H Active (pixels) : 1600  
H Blanking (pixels) : 560  
V Active (lines) : 1200  
V Blanking (lines) : 50  
H Sync Offset (F Porch) (pixels) : 304  
H Sync Pulse Width (pixels) : 192  
V Sync Offset (F Porch) (lines) : 46  
V Sync Pulse Width (lines) : 3  
H Image Size (mm) : 340  
V Image Size (mm) : 255  
H Border (pixels) : 0  
V Border (lines) : 0  
Flags : Non-interlaced  
Normal Display, No stereo  
Digital Separate Sync  
Positive V Sync  
Positive H Sync

## Monitor Descriptor #2

Serial Number : 5800C12345678

## Monitor Descriptor #3

Monitor Name : TYPHOON19A

## Monitor Descriptor #4

Min. Vt rate Hz : 50  
Max. Vt rate Hz : 160  
Min. Horiz. rate kHz : 30  
Min. Horiz. rate kHz : 95  
Max. Supported Pixel not specified

Extension Flag : 0

Check sum : 5e(hex)

## Hex Data of DDC1/2B (19A580BQ/74C)

For Hitachi CRT

|         |         |         |         |         |         |         |         |
|---------|---------|---------|---------|---------|---------|---------|---------|
| 0: 0    | 1: ff   | 2: ff   | 3: ff   | 4: ff   | 5: ff   | 6: ff   | 7: 0    |
| 8: 41   | 9: c    | 10: 9   | 11: 11  | 12: 4e  | 13: 61  | 14: bc  | 15: 0   |
| 16: 24  | 17: 7   | 18: 1   | 19: 1   | 20: c   | 21: 22  | 22: 19  | 23: b0  |
| 24: e8  | 25: 0   | 26: b9  | 27: a0  | 28: 57  | 29: 49  | 30: 9b  | 31: 26  |
| 32: 10  | 33: 48  | 34: 4c  | 35: 24  | 36: 43  | 37: 80  | 38: 45  | 39: 59  |
| 40: 61  | 41: 59  | 42: 81  | 43: 99  | 44: a9  | 45: 4f  | 46: 1   | 47: 1   |
| 48: 1   | 49: 1   | 50: 1   | 51: 1   | 52: 1   | 53: 1   | 54: 1a  | 55: 4f  |
| 56: 40  | 57: 30  | 58: 62  | 59: b0  | 60: 32  | 61: 40  | 62: 30  | 63: c0  |
| 64: e3  | 65: 48  | 66: 54  | 67: ff  | 68: 10  | 69: 0   | 70: 0   | 71: 1e  |
| 72: 0   | 73: 0   | 74: 0   | 75: ff  | 76: 0   | 77: 35  | 78: 38  | 79: 30  |
| 80: 30  | 81: 43  | 82: 31  | 83: 32  | 84: 33  | 85: 34  | 86: 35  | 87: 36  |
| 88: 37  | 89: 38  | 90: 0   | 91: 0   | 92: 0   | 93: fc  | 94: 0   | 95: 54  |
| 96: 59  | 97: 50  | 98: 48  | 99: 4f  | 100: 4f | 101: 4e | 102: 20 | 103: 31 |
| 104: 39 | 105: 41 | 106: a  | 107: 20 | 108: 0  | 109: 0  | 110: 0  | 111: fd |
| 112: 0  | 113: 32 | 114: a0 | 115: 1e | 116: 5f | 117: ff | 118: 0  | 119: a  |
| 120: 20 | 121: 20 | 122: 20 | 123: 20 | 124: 20 | 125: 20 | 126: 0  | 127: 8e |

**a: Service DDC Kit**

DDC Module (DDC cable), Part number = 4822 320 12004

DDCV2N.EXE software (3.5" disk), Part number = 4822 711 00024

**b: Please refer to Service Information 4822 727 21995 for using the Service DDC Kit.**

## Warnings

1. Safety regulations require that the unit should be returned in its original condition and that components identical to the original components are used. The safety components are indicated by the symbol **▲**.
2. In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is **0 V** (after approximately 30 seconds).
3. **ESD ▲**  
All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten their life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the ground of the unit. Keep components and tools also at this same potential.
4. When repairing a unit, always connect it to the AC Power voltage via an isolating transformer.
5. Be careful when taking measurements in the high-voltage section and on the picture tube panel.
6. It is recommended that safety goggles be worn when replacing the picture tube.
7. When making adjustments, use plastic rather than metal tools. This will prevent any short-circuit or the danger of a circuit becoming unstable.
8. Never replace modules or other components while the unit is switched on.
9. Together with the deflection unit, the picture tube is used as an integrated unit. Adjustment of this unit during repair is not recommended.
10. After repair, the wiring should be fastened in place with the cable clamps.

## Notes

1. The direct voltages and waveforms are average voltages. They have been measured using the Service test software and under the following conditions :
  - Mode : 1024 \* 768 (56.5kHz / 70Hz)
  - Signal pattern : grey scale
  - Adjust brightness and contrast control for the mechanical mid-position (click position)
2. The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
3. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

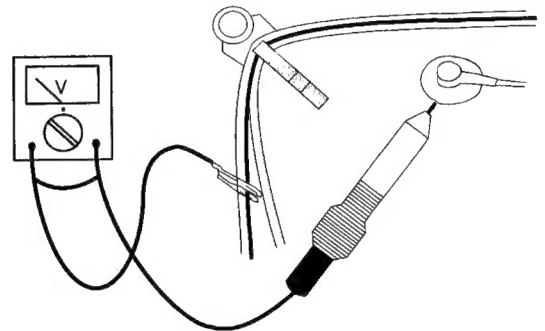


Fig.1

# Electrical Adjustments

## 0. General

When carry-out the electrical settings in many cases a video signal must be applied to the monitor. A computer with :

- ATI GPT-1600 (4822 397 10065), Mach 64 (up to 107kHz)

are used as the video signal source. The signal patterns are selected from the "service test software" package, see user guide 4822 727 21046 (GPT-1600).

0.1 This monitor has 12 factory-preset modes as below.

|                           |                            |
|---------------------------|----------------------------|
| 640 x 400 31.5 kHz/70 Hz  | 1152 x 870 68.7 kHz/75 Hz  |
| 640 x 480 31.5 kHz/60 Hz  | 1152 x 900 71.8kHz/76Hz    |
| 640 x 480 37.5 kHz/75 Hz  | 1280 x 1024 80.0 kHz/75 Hz |
| 800 x 600 46.9 KHz/75Hz   | 1280 x 1024 91.1 kHz/85Hz  |
| 800 x 600 53.7 kHz/85Hz   | 1600 x 1200 93.7 kHz/75 Hz |
| 1024 x 768 60.0 kHz/75 Hz |                            |
| 1024 x 768 68.7 kHz/85 Hz |                            |

0.2 With normal VGA card:

If not using the ATI card during repair or alignment, The service engineer also can use this service test software adapting with normal standard VGA adaptor and using standard VGA mode 640 x 480, 31.5 kHz/60 Hz (only) as signal source.

0.3 AC/DC Measurement:

The measurements for AC waveform and DC figure is based on 640 x 480 31.5 kHz/60 Hz resolution mode with test pattern "gray scale".  
Power input: 110V AC

### 1. B+ supply voltage (3194) 185Vdc

- Apply a video signal in the 1024 x 768 with 69 kHz/85Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Pre-set trimming potentiometer 3194(+) and 3644(EHT) in mid-position.
- Set Vg2 (screen) to fully Counter-clockwise (zero beamcurrent).
- Connect a dc voltmeter between the joint of capacitor 2181 and ground (common ground).
- Set the B+ trimming potentiometer 3194 so that the reading on the dc voltmeter is 185 V +/- 0.5 Vdc.

### 2. High-voltage EHT (3644)

- Apply a video signal in the 1024 \* 768 with 69 kHz/85Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Turn off the power.
- Connect a "high-voltage voltmeter" between the high-voltage connection of the picture tube and earth.
- Turn on the power.
- Set the EHT trimming potentiometer 3644 so that the "high-voltage voltmeter" reads 26.0 kV +/- 0.2 kV (for 19").  
25.0 kV +/- 0.2 kV (for 17").
- Turn off the power.
- Remove the "high-voltage voltmeter" from the picture tube.
- Turn on the power again.
- Remove the "high-voltage voltmeter" from the picture tube.
- Turn on the power again.

### 3. Monitor the following auxiliary voltages.

- + 12.0V SOURCE ACROSS C2192 + 12.0V +/- 0.5VDC.
- + 15.0V SOURCE ACROSS C2187 + 15.0V +/- 1.0VDC.
- 15.0V SOURCE ACROSS C2189 - 15.0 V +/- 1.0VDC.
- + 6.3 V SOURCE ACROSS D6195 "-" 6.3V +/- 0.5VDC.
- +125.0V SOURCE ACROSS C2182 +125.0V +/- 2.0VDC.
- +185.0V SOURCE ACROSS C2181 + 185.0V +/- 1.5VDC.
- + 81.0V SOURCE ACROSS C2185 + 81.0 V +/- 2.0VDC.

## 4. General conditions for alignment

- 4.1 During all alignments, supply a distortion free AC mains voltage to set via an isolating transformer with low internal impedance.
- 4.2 Align in pre-warmed condition, at least 30 minutes warm-up with nominal picture brightness.
- 4.3 Purity, geometry and subsequent alignments should be carried out in magnetic cage with correct magnetic field.

Northern hemisphere : H=0, V=430 mG, Z=0

Southern hemisphere : H=0, V=-520 mG, Z=0

Equatorial Support : H=0, V=0 mG, Z=0

- 4.4 All voltages are to be measured or applied with respect to ground.

**Note: Do not use heatsink as ground.**

- 4.5 Adjust function controls " " to center position except for contrast control which should be set to MAX.
- 4.6 Apply a video signal in the 1280 x 1024 with 64kHz/60Hz mode, select cross hatch pattern, set the Brightness for visible raster, adjust H-size for 340mm (19" monitor)/300mm (17" monitor) "raster width", adjust R3551 for Horizontal raster center.

## 5. To access factory mode:

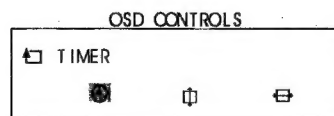
- Turn off monitor (don't turn off PC)
  - Press " " and " " simultaneously on the front control panel, untill the OSD menu with characters " factory mode (below OSD menu)" come on the screen of monitor.
  - If OSD menu disappears on the screen of monitor, press " " again (anytime), then the OSD menu comes on the screen again.
  - using " " : to select OSD menu.  
: to increase or decrease the setting.
- (Please also refer to page 4,5,6 and 7 for OSD adjustment)
- Using " " to confirm the selection.

### 5.1. To leave factory mode

- \* After alignment of factory mode, turn off monitor (if you do not turn off monitor, the OSD menu is always at the factory mode), then turn on monitor again (at this moment, the OSD menu goes back to user mode).

## 6. OSD CONTROLS (During alignment)

During alignment, please use the "OSD controls" to keep OSD menu, or to shift OSD menu as below.



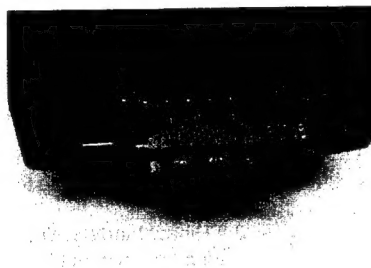
- ⏪ **TIMER** Set OSD display time, select "OFF", then the OSD menu will stay on the screen (won't disappear).
- ⬆️ **VERTICAL POSITION** Move the OSD windows up or down.
- ⬅️ **HORIZONTAL POSITION** Move the OSD window left or right.

## USB Connections

### If you have Windows '95...

follow these steps to complete setting up your monitor.

1. Start Windows '95 and install CD ROM supplied with this monitor.
2. Click on the "START" icon. Next, click on the "SETTINGS" icon. Then click on "CONTROL PANEL."
3. Double-click on "DISPLAY" icon. Next, click on "SETTINGS" tab. Then click on "ADVANCED PROPERTIES" dialog box.
4. Click on "MONITOR" tab.
- 5.(a) If you have an old computer, click on "CHANGE" dialog box. Next, "SELECT DEVICE" screen appears. Now click on "HAVE DISK" dialog box. and select CD-ROM drive  
Or
- 5.(b) If you have a new computer, "SELECT DEVICE" screen automatically appears. Click on "HAVE DISK" dialog box and select CD-ROM drive.
6. Select "OK" in the "INSTALL FROM DISK" dialog box. If model name of the Philips monitor is correct, click "OK" tab in the "SELECT DEVICE" dialog box.
7. Click "CLOSE" tab in the "ADVANCED PROPERTIES" dialog box. If your Windows'95 version is different or you need more detailed installation information, please refer to the windows '95 user's manual. **For additional information on the monitor, please refer to the owner's manual.**

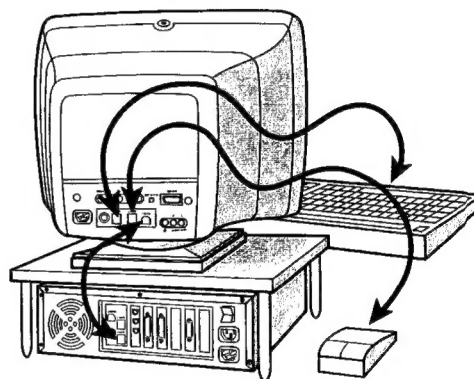


### USB CONNECTIONS

USB (Universal Serial Bus ) is an innovation in connecting your IBM- compatible computer to your monitor. By using the USB, you will be able to connect your keyboard, mouse, printer, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. Plus, you will have true plug-and-play capability. While the software is still being developed, Philips has included the hardware so you will be ready to take advantage of this next generation in computer development.

For an IBM-compatible Computer:

1. Turn off the computer.
  2. Connect the (optional) USB Hub and cable to the computer and to the monitor. (Computer must have USB port.)
  3. Connect the power cable.
  4. Turn on the monitor. Then turn on the computer.
  5. With the installation of the correct software, you will be able to connect specially-made peripherals to the monitor.
- Note : USB Hub and cables sold separately. USB Bay exists in back of monitor.



## Use the information file (philips.inf) for Windows'95 (Philips Monitors-Driver Disk)

Philips' monitors build in VESA DDC1/2B feature to support Plug & Play requirement for Windows'95. You can install this information file (philips.inf) in order to select your Philips monitor from "Monitor" dialog box in Windows 95 to activate Plug & Play application. The installation procedure based on Windows '95 OEM Release 2 is specified as follows,

1. Start Windows'95
2. Click the 'Start' button, point to 'Settings', and then click 'Control Panel'
3. Double-click the 'Display' icon, select the 'Settings' tab, then select "Advanced Properties" tab.
4. Select "Ok" in the "Install From Disk" dialog box.
5. Now, you can see the Philips monitor is appeared.
6. If the model name of Philips monitor is correct, click "Ok" tab in "Select Device" dialog box.
7. Then, click "Close" tab in "Advanced Properties" dialog box.
8. Now, you can select "Refresh Rate" to change monitor resolution

If your Windows'95 version is different or you need more detail installation information, please refer to Windows 95 user's manual.

## 7. Alignment of Vg2 cut-off point, white tracking (OSD control)

Equipment : 1. Video Test Generator-801GC (Quantum Data)  
2. Color-analyzer (Minolta CA-100)

VG2 [(screen), at the bottom of the L.O.T.].

- \* Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode, select the "full white pattern".
- \* Use color-analyzer (Minolta CA-100) to adjust cutoff and white uniformity.

OSD R/G/B cut-off and R/G/B gain can be accessed, with initial data:

R cutoff = 50%, R gain = 70%  
G cutoff = 50%, G gain = 70%  
B cutoff = 50%, B gain = 70%

Step 1: To select the character "FACTORY MODE" as shown in Fig. 2.1, press " " to access the OSD menu for R/G/B gain & cutoff as shown in Fig. 2.2.

Step 2: Use " " to increase or decrease the value as shown in Fig. 2.3.

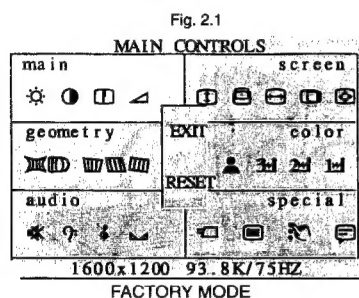


Fig. 2.2

|           | GAIN  | CUTOFF |
|-----------|-------|--------|
| 9300K     | R G B | R G B  |
| 6500K     | R G B | R G B  |
| 5500K     | R G B | R G B  |
| FULL-SIZE | HOR   | VER    |
| H-LIN     |       |        |

Fig. 2.3

|           | GAIN  | CUTOFF |
|-----------|-------|--------|
| 9300K     | R G B | R G B  |
| 6500K     | R G B | R G B  |
| 5500K     | R G B | R G B  |
| FULL-SIZE | HOR   | VER    |
| H-LIN     |       | 63%    |

- 7.1 Connect the video input, set brightness control at 50% and contrast at minimum position, Vg2 at Minimum (counter clockwise, and ABL (3647, potentiometer) at center position. Slowly increase Vg2 voltage until light output is at 0.17Ft-L +/- 0.05Ft-L (Y=0.17Ft-L, on the screen of CA-100).

7.2 (The screen of monitor is dark now)

- : Press " " to show the OSD menu as shown in Fig. 2.1.
- : Select the character "FACTORY MODE" to access the R/G/B adjustment as shown in Fig. 2.2 and Fig. 2.3.
- : Adjust the cutoff of R/G/B to get 9300K (x=0.281 +/- 0.015, y=0.311 +/- 0.015), and brightness output at 0.17 +/- 0.05 Ft-L (Y=0.17Ft-L).

7.3 : Press " " to set contrast at maximum (100%).

- : Adjust gain of R/G/B to get 9300K (x=0.281 +/- 0.015, y=0.311 +/- 0.015, don't care about the Y value)

7.4 Apply a small white square 60 x 60 mm pattern, or 8% fill of full screen, brightness set to center (50%), and contrast at maximum (100%), adjust gain control (OSD) to reach 34 +/- 2 Ft-L.

7.5 : Select the 6500K colour temperature as shown in Fig. 2.2.

- : Adjust the R/G/B cutoff and R/G/B gain as shown in procedure 7.2~7.4 to get R/G/B cutoff x= 0.313 +/- 0.015  
y= 0.329 +/- 0.015  
Y= 0.17 +/- 0.05 Ft-L  
R/G/B gain x= 0.313 +/- 0.015  
y= 0.329 +/- 0.015  
Y= 30 +/- 2 Ft-L

- 7.6 : Select the 5500K colour temperature as shown in Fig. 2.2.  
: Adjust the R/G/B cutoff & R/G/B gain as procedure 7.2~7.4

to get R/G/B cutoff x= 0.332 +/- 0.015  
y= 0.347 +/- 0.015  
Y= 0.17 +/- 0.05 Ft-L  
R/G/B gain x= 0.332 +/- 0.015  
y= 0.347 +/- 0.015  
Y= 25 +/- 2 Ft-L

7.7 Apply full white pattern at 9300K, adjust ABL R3647 to reach 31 +/- 2 Ft-L (19" contrast at maximum, brightness at center). 30 +/- 2 Ft-L (for 17" monitor).

## 8. Picture geometry setting (factory pre-set modes)

- Apply a video signal with cross-hatch pattern.
- Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode.
- Set brightness and contrast controls to their center positions (OSD control).

8.1 Horizontal geometry (OSD control)

- Adjust the H-width to 340 mm (for 19" monitor). 300 mm (for 17" monitor).
- Adjust the H-phase to center position.

8.2 Vertical geometry (OSD control)

- Adjust vertical size to 255 mm (for 19" monitor). 225 mm (for 17" monitor).
- Adjust V-phase to center position.

8.3 Trapezoid distortion (OSD control)

- Adjust the trapezoid to get optimal vertical lines.

8.4 Pincushion (OSD control)

- Adjust the pincushion to get optimal vertical line.

8.5 Parallelogram (OSD control)

- Adjust parallelogram so that vertical lines are vertical or symmetrically about the center vertical axis.

8.6 Unbalance-pin (OSD control)

- Adjust the unbalance-pin so that that vertical border lines are aligned symmetrically.

8.7 Rotation (OSD control)

- Adjust picture so that vertical tilt is less than +/- 0.5mm.

8.8 Store the preset results by selecting the "exit" (OSD control).

8.9 Repeat the procedure 8.1 to 8.8 until all the preset timings have been adjusted completely

## 9. Focus adjustment

- : Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode.
- : Select "ME" pattern.
- : Set the brightness at center (50%) and the contrast at maximum (100%).
- : Adjust focus potentiometers (top of L.O.T.) Focus 1 for horizontal focus and Focus 2 for vertical focus so that the picture at 2/3 of the diagonal lines (from center to four corners) of the displayed screen is as sharp as possible.

## 10. Loading DDC code

The DDC HEX data should be written into the DDC IC (7331) by EEPROM writer or equivalent method.

a: Service DDC Kit

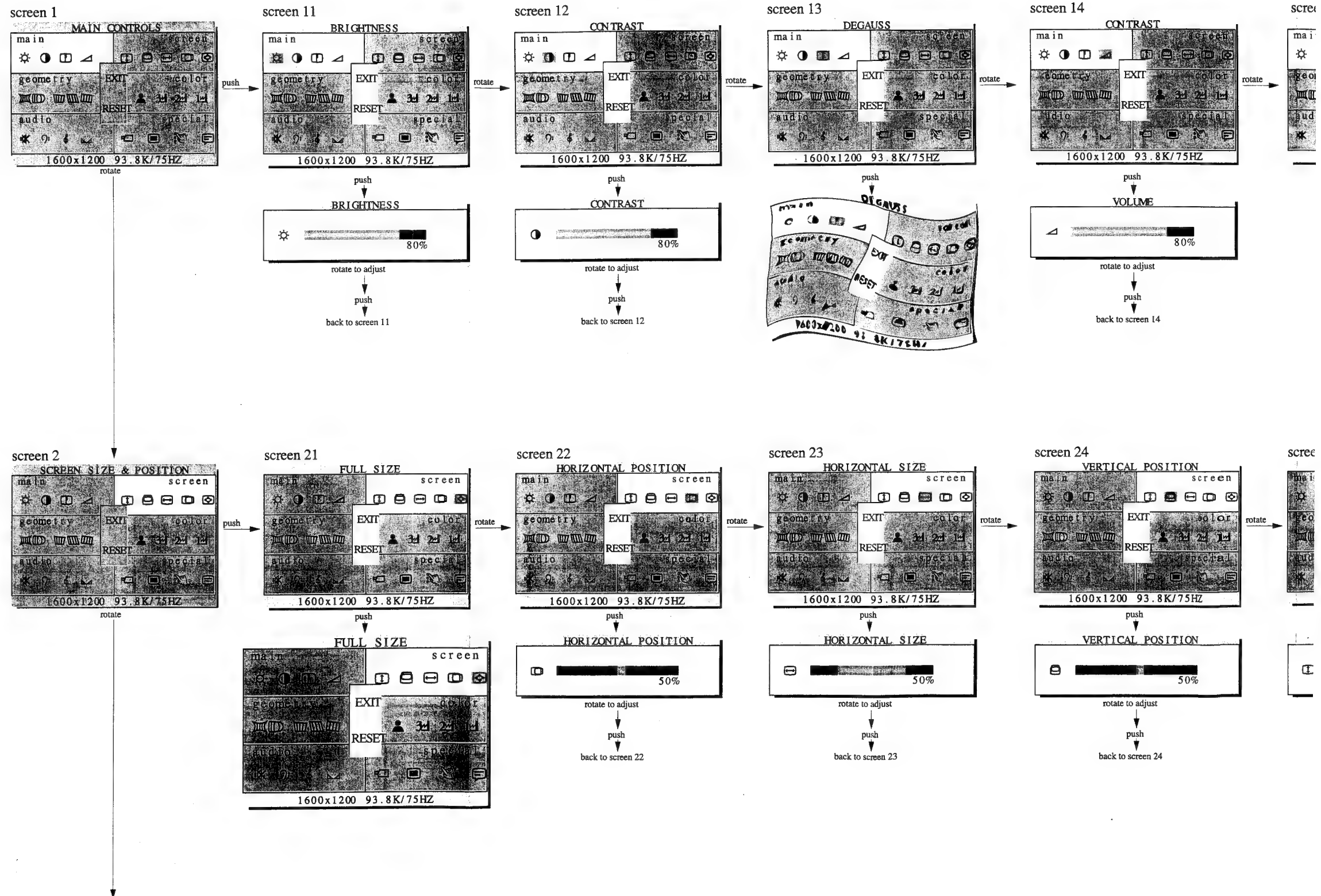
DDC Module (DDC cable), Part number = 4822 320 12004

DDCV2N.EXE software (3.5" disk), Part number = 4822 711 00024

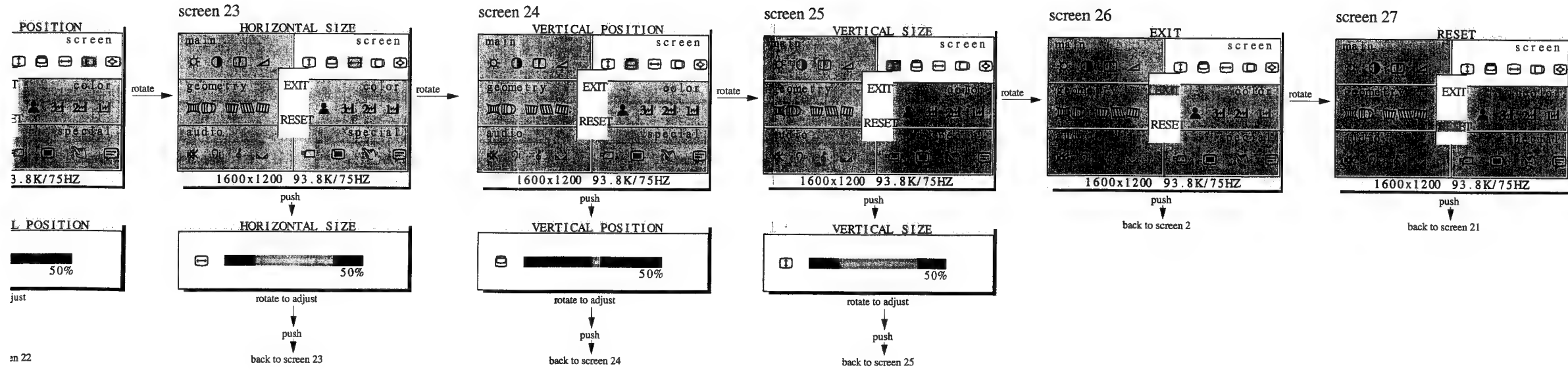
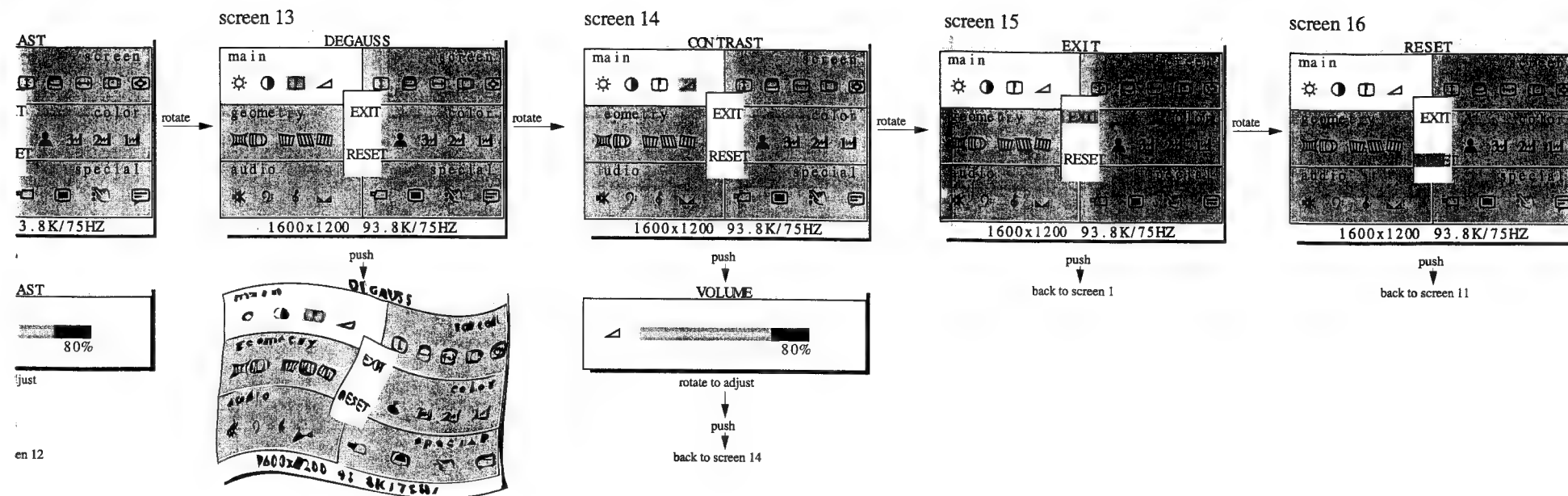
b: Please refer to Service information 4822 727 21995 for using the Service DDC Kit.



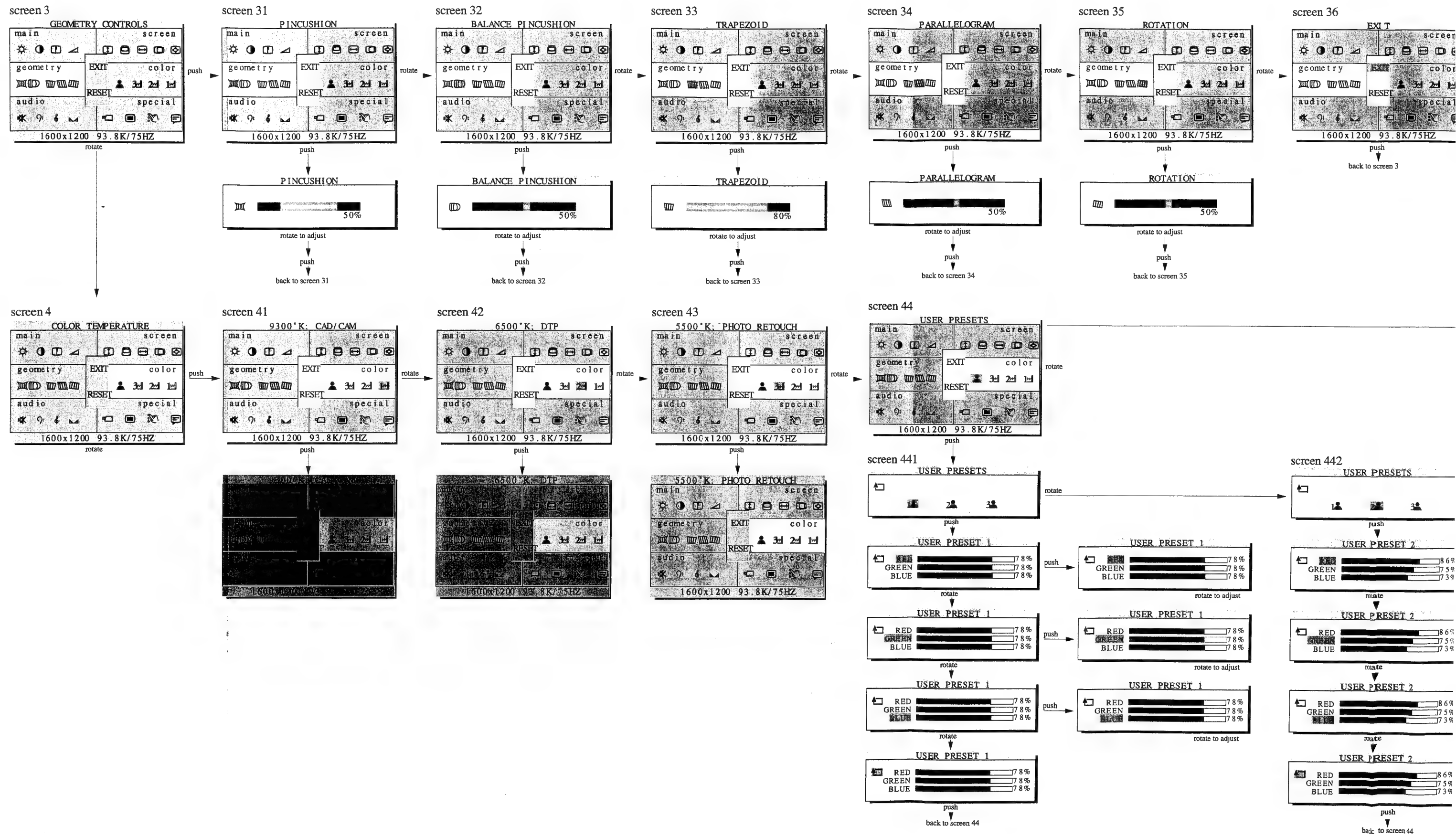
# Quick Reference for OSD Adjustment





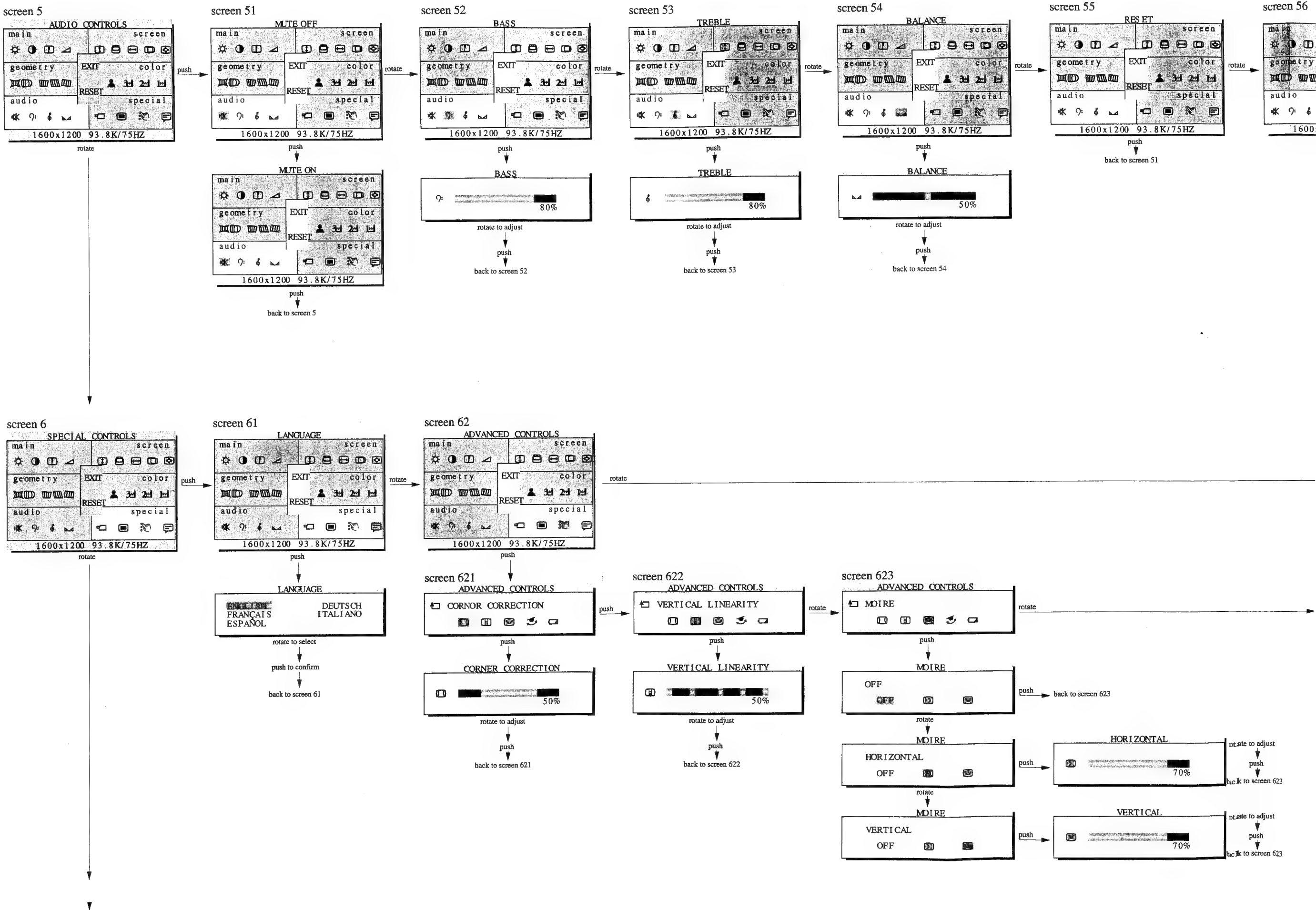


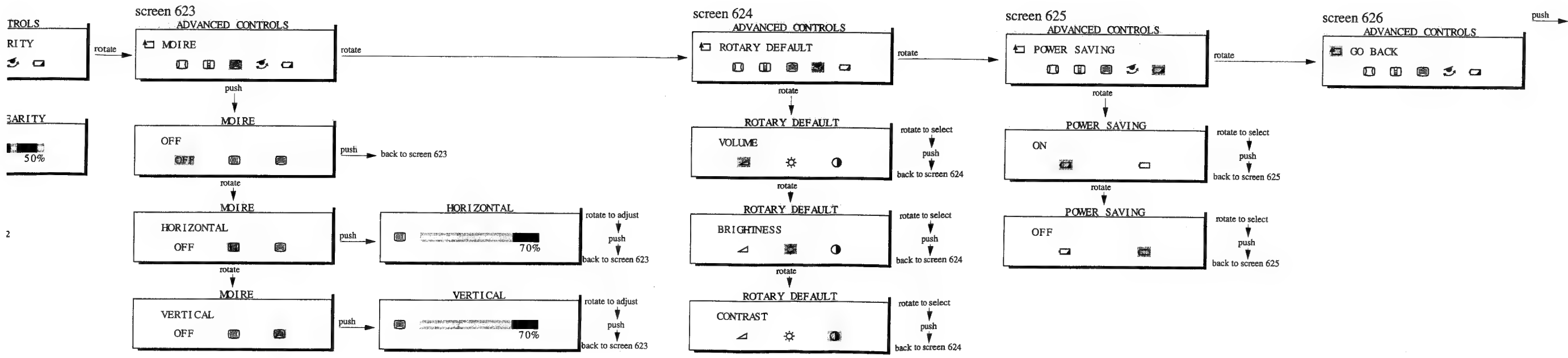
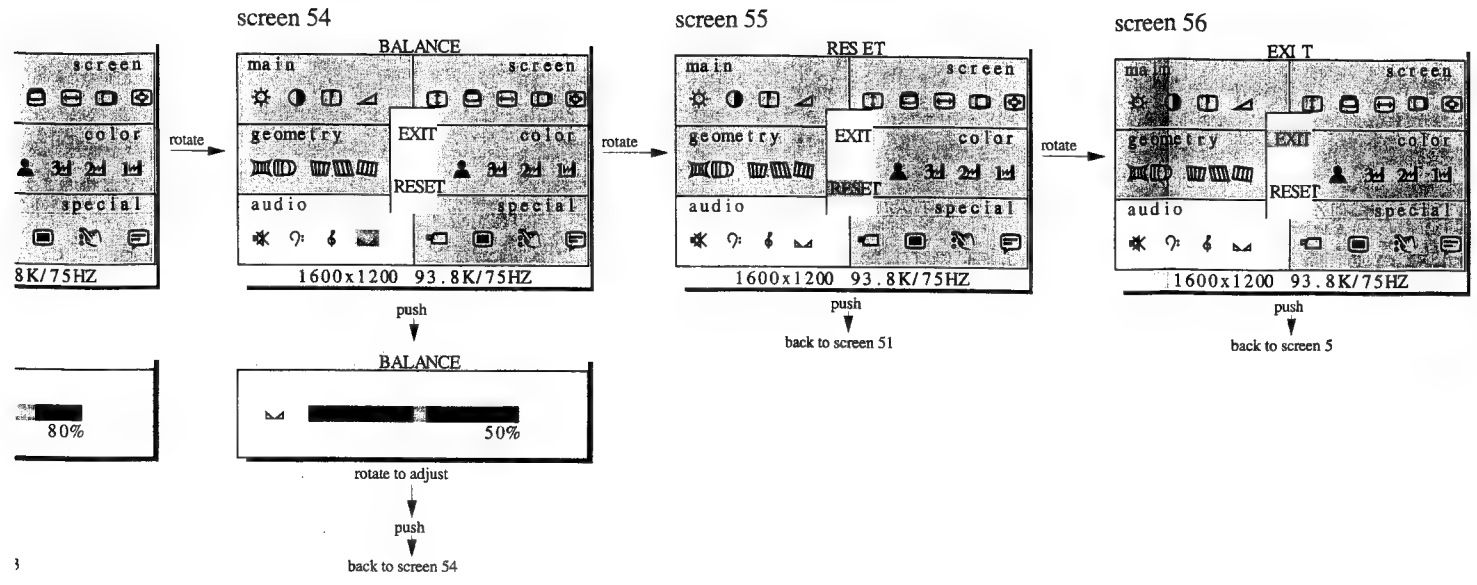
# Quick Reference for OSD Adjustment (Continued)





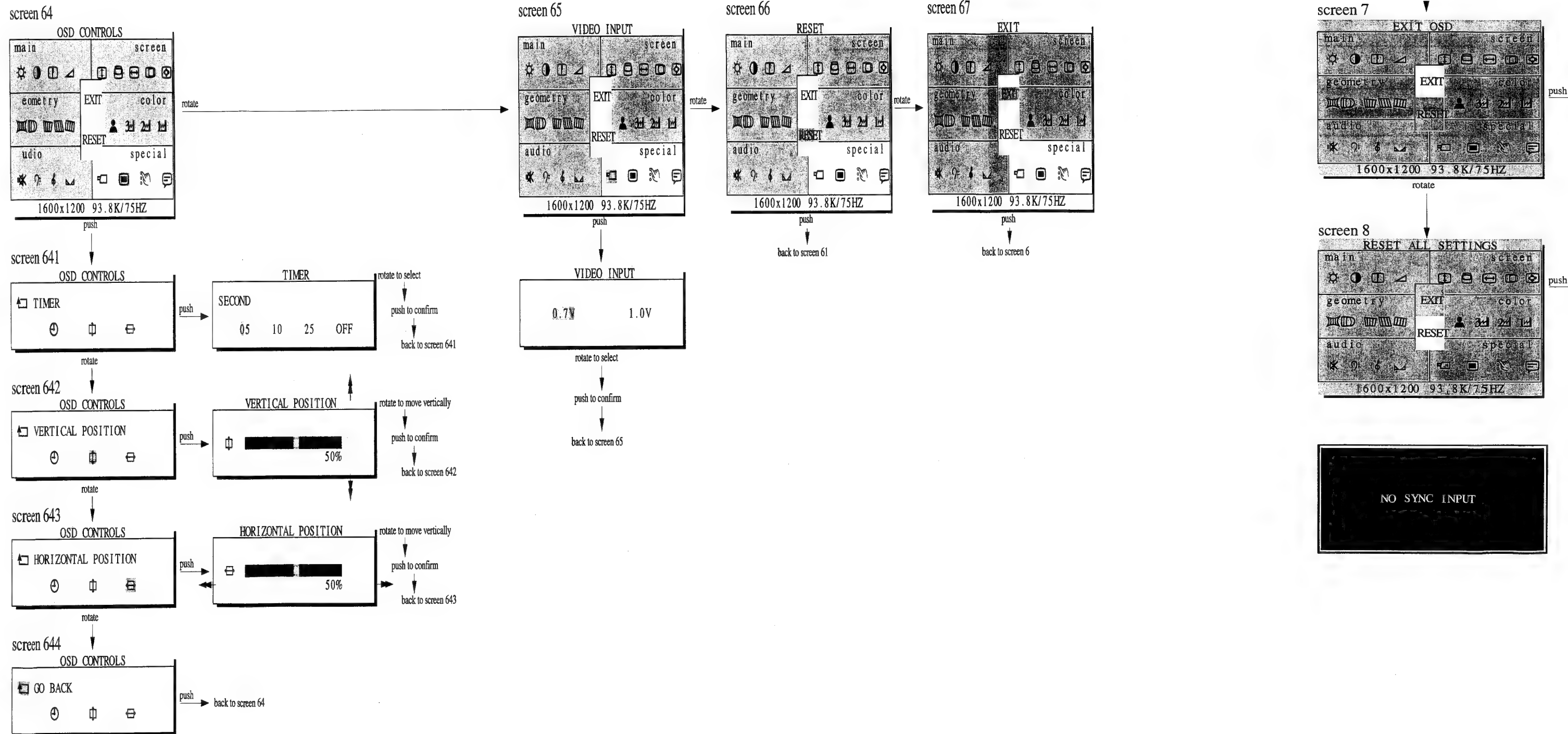
Quick Reference for OSD Adjustment (Continued)



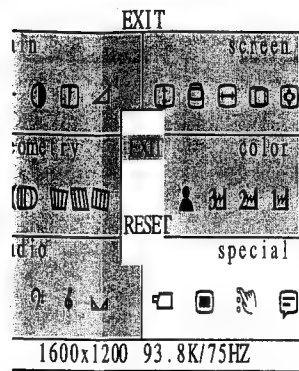




# Quick Reference for OSD Adjustment (Continued)

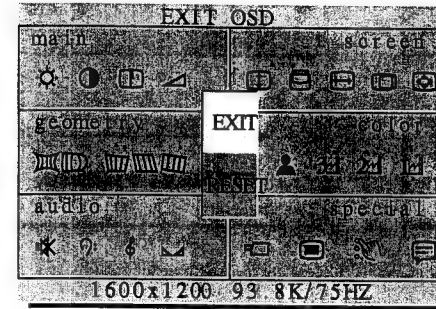


screen 6



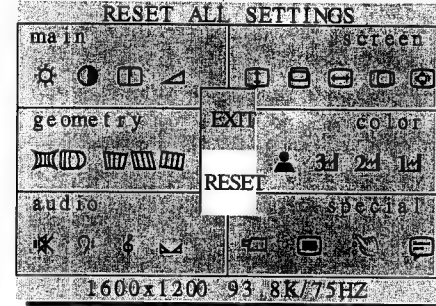
push  
back to screen 6

screen 7

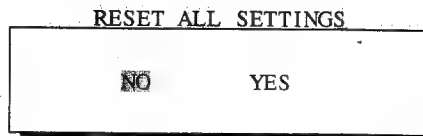


push → exit OSD

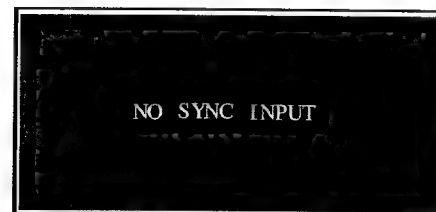
screen 8



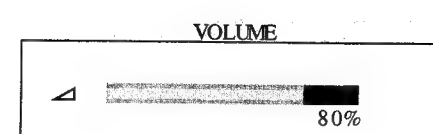
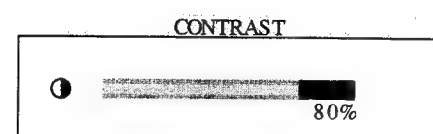
push →



push → back to screen 1



"When rotary default setting selected"





# Mechanical Adjustments

## 0. Location of the panel

- 0.1 Main panel (1156)
- 0.2 Video panel (1157)
- 0.3 Earphone panel (1158)
- 0.4 Terminal panel (1159)
- 0.5 USB panel (1160) - optional
- 0.6 Encoder panel (1162)
- 0.7 Power switch panel (1163)

## 1. General

To be able to perform measurements and repairs on the circuit boards, the monitor should be placed in **Service Position (Fig. 3.1)** first:

*How to remove the back cover of monitor :*

There are 4 screws [2 screws are at the rear of the monitor, the other two screws are on the bottom of the monitor] to fix the front cabinet and back cover of the monitor.

Step 1: Remove the "cable cover" as shown in Fig. 3.2.

Step 2: Remove 2 screws (rear view) as shown in Fig. 3.3.

Step 3: Turn the set to remove the other 2 screws, as shown in Fig. 3.4 .

Step 4: Turn the set to its original position.

Step 5: Remove back cover (\* There are two "plastic clips" on the "front cabinet" to hold the "rear cover" as shown in Fig. 3.5).

*Chassis :*

After removing the back cover, you can see the inside the monitor with metal frame and metal shield.

- Remove 26 screws for service position as Fig. 3.6 to Fig. 3.15.

**Video panel :**

- After removing the metal frames, remove the metal shielding on rear side of Video panel for measurement.

**Main panel :**

After removing the metal frames,

- Disconnect "Video panel"
- Disconnect EHT cable (EHT cap)
- Disconnect 4 pin connector "M1501" (wire of YOKE, on Main panel)
- Disconnect 2 pin connector "M1114" (degaussing coil, on Main panel)
- Disconnect 1 pin connector "M1701" (on Video panel)
- Disconnect 2 pin connector "M1219" (on Main panel)
- Disconnect 9 pin connector "M1217" (on Main panel)
- Disconnect 3 pin connector "M1213" (on Main panel)
- Disconnect 3 pin connector "M1504" (on Main panel)
- Disconnect 2 pin connector "M1218" (on Main panel)
- Disconnect 2 pin connector "M1220" (on Main panel)
- Disconnect 7 pin connector "M1212" (on Main panel)

- To slide out Main panel.

- Remove 2 screws as shown in Fig. 3.14, then push the clips to the right as shown in Fig. 3.13, to separate the bottom plate.

- Remove the plastic frame as shown in Fig. 3.15.

- Remove the "Rotary panel" "Earphone panel" from Front cabinet and place it on the table as shown in Fig. 3.1.

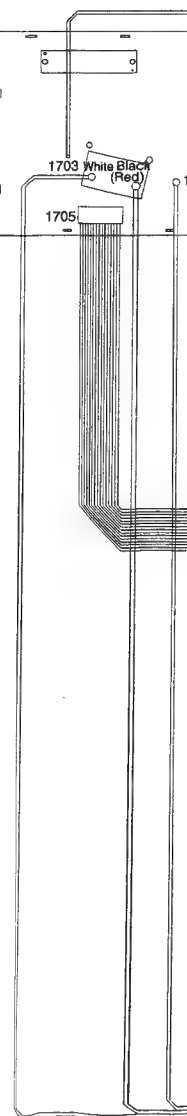
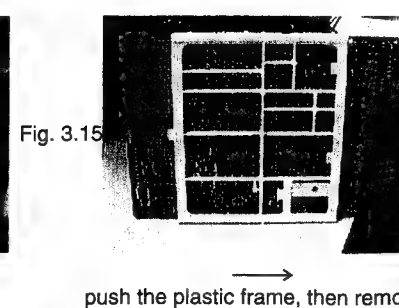
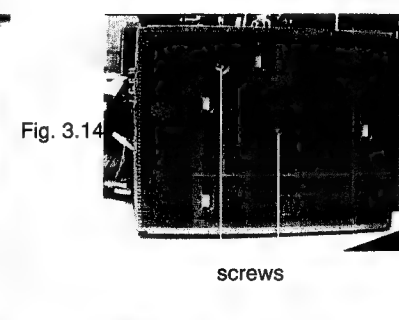
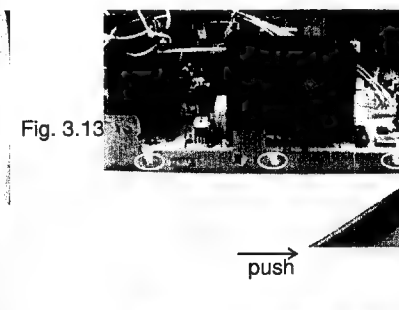
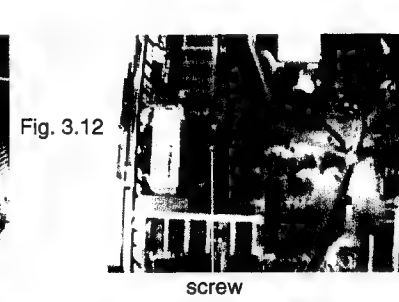
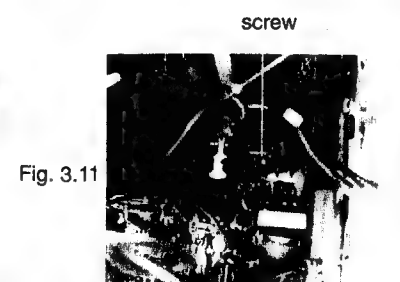
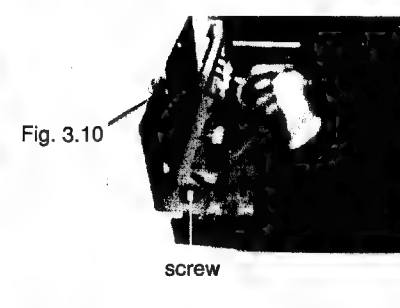
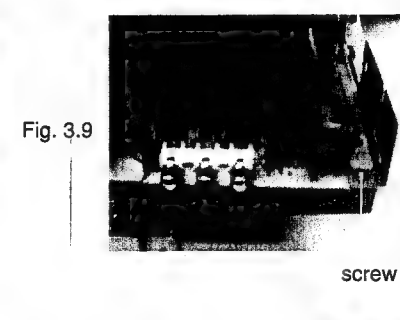
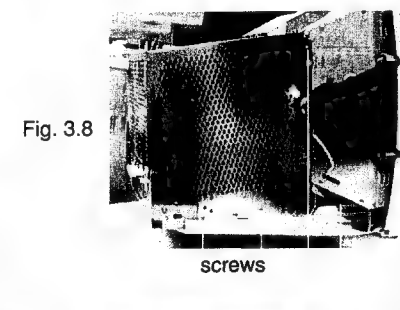
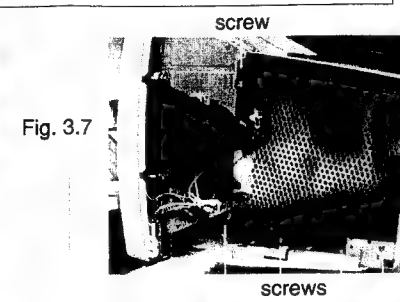
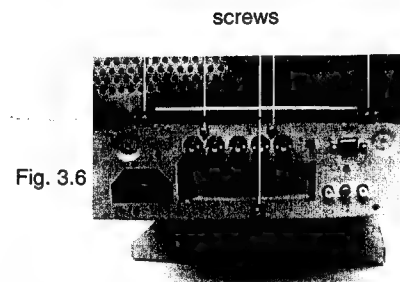
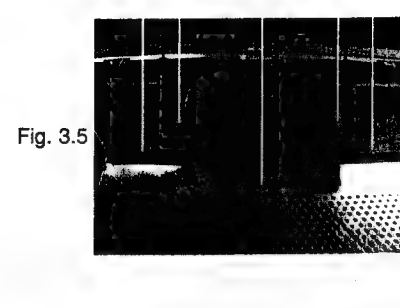
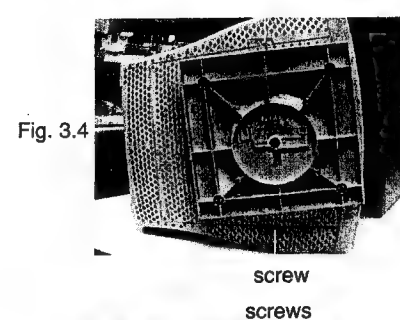
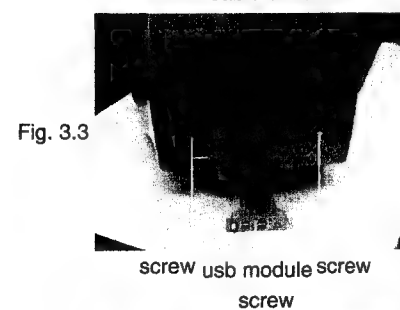
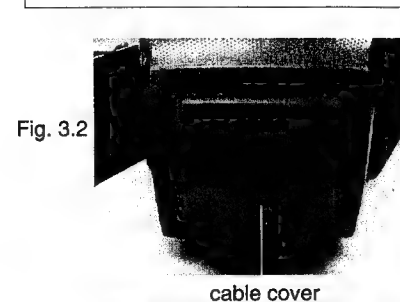
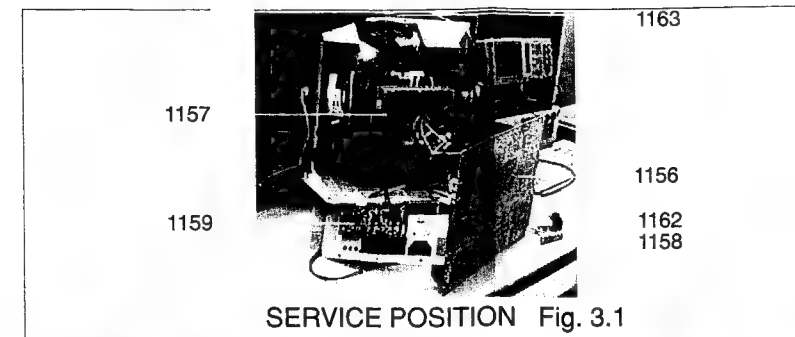
- Connect all the connectors and panels for service position.

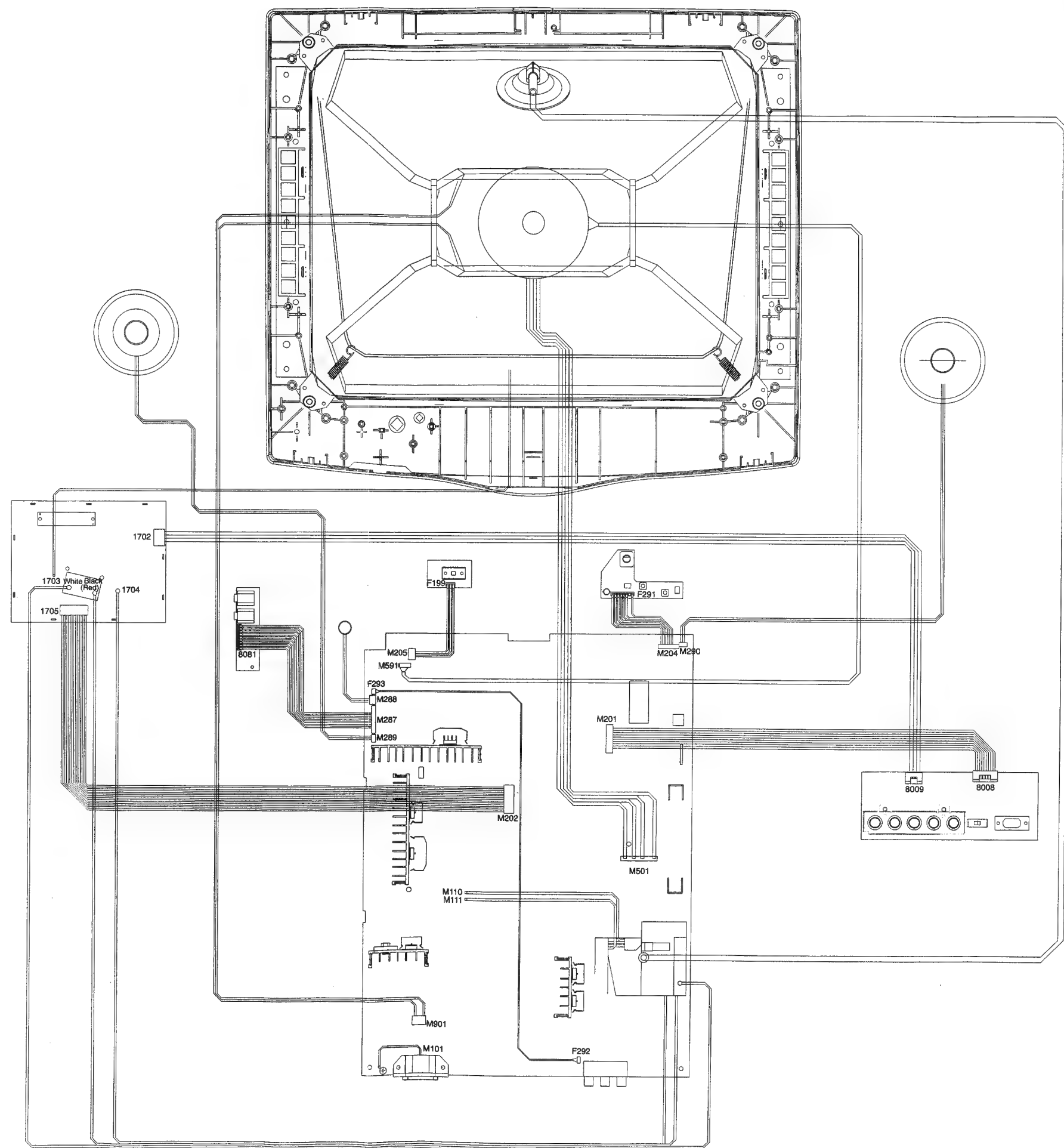
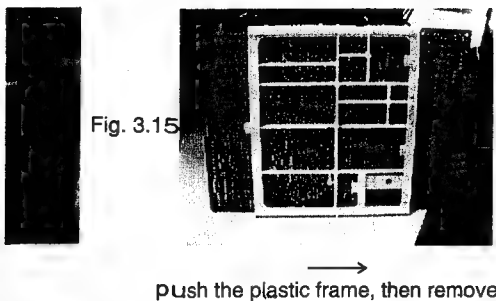
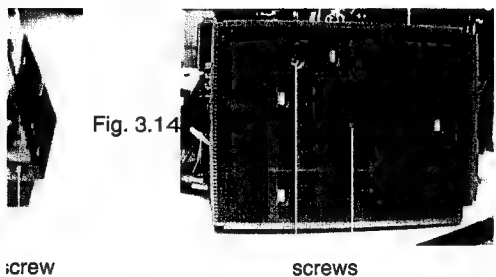
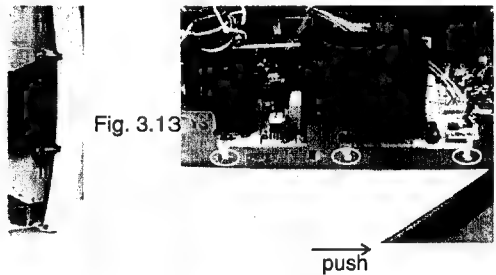
**Service position :**

Place monitor in service position as shown in Fig. 3.1 through Fig. 3.15.

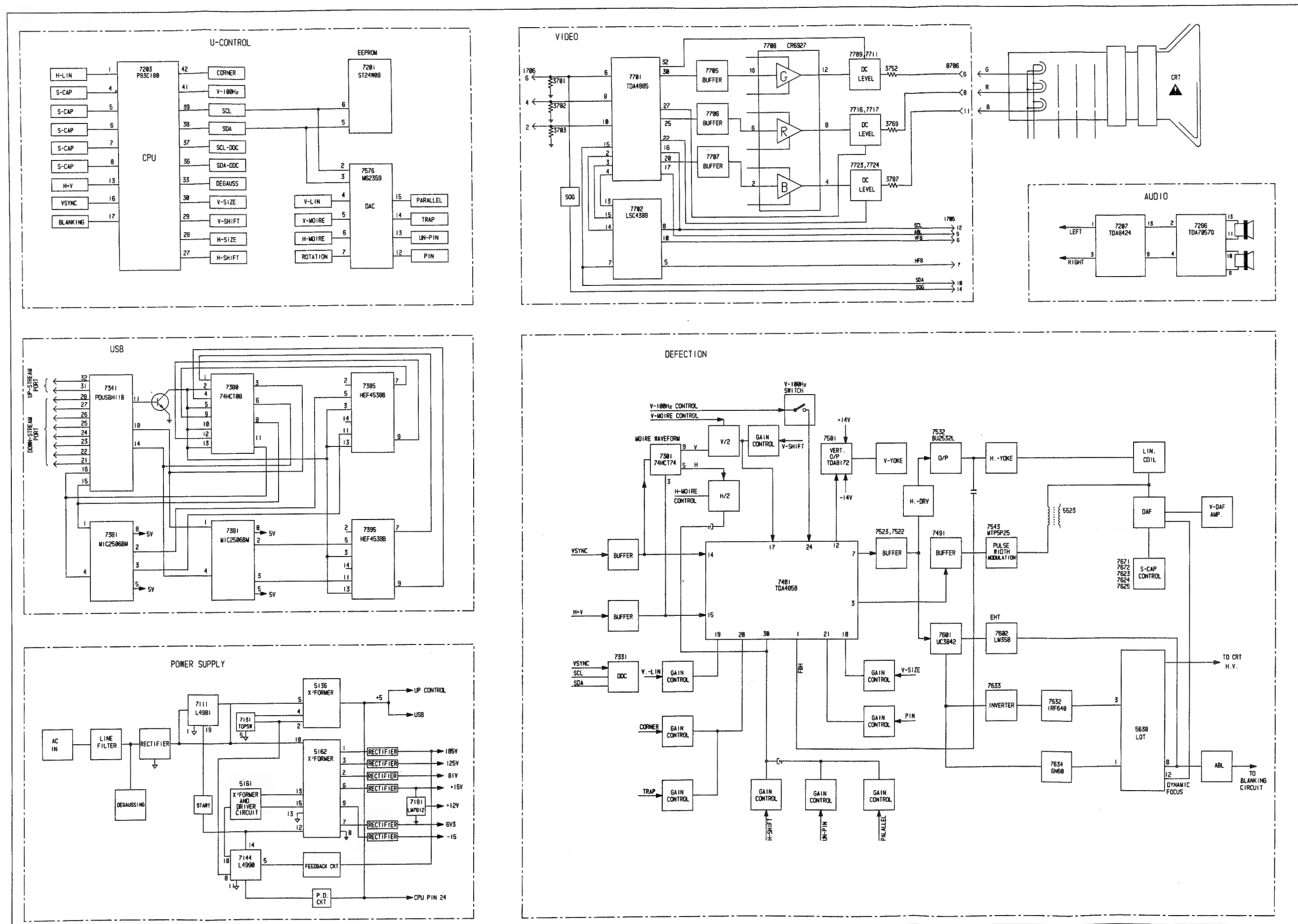
## 2. Repair instructions

After the service position is obtained, all the panel's copper trace sides may be accessed.



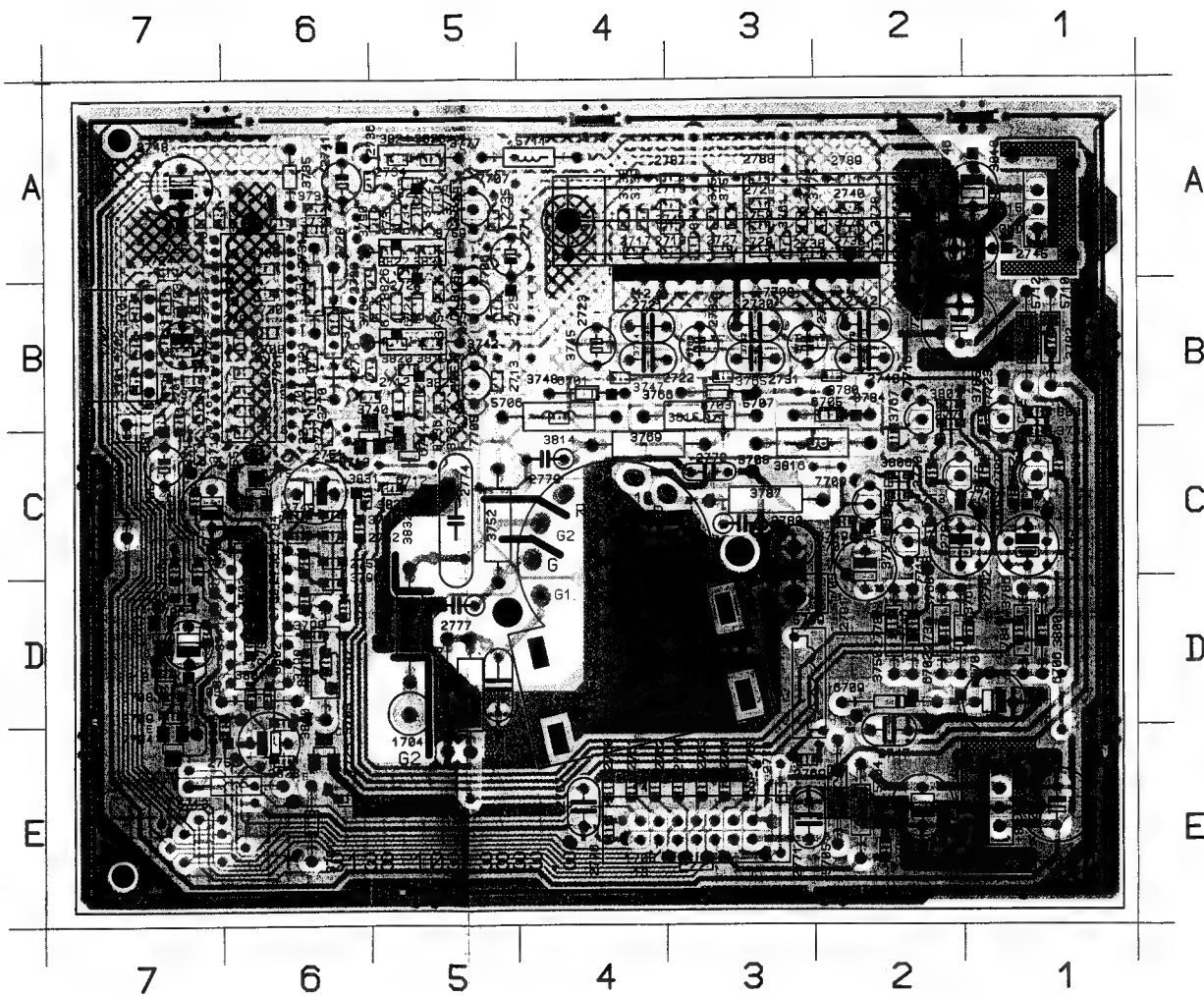


## Block Diagram

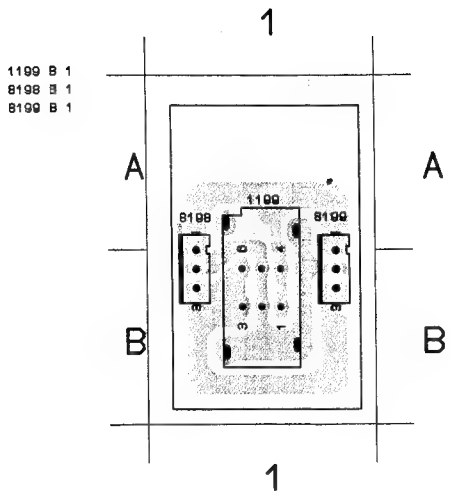


Video Panel C.B.A. (A)

|          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|
| 6783 B 3 | 3797 D 6 | 3749 C 2 | 2793 C 1 | 2743 B 2 | 1781 C 3 |
| 6784 D 2 | 3798 D 6 | 3750 D 2 | 3781 B 7 | 2744 B 3 | 1782 B 7 |
| 6785 B 3 | 3799 D 6 | 3751 C 2 | 3782 B 7 | 2745 A 2 | 1783 D 3 |
| 6786 D 1 | 3800 D 1 | 3752 D 5 | 3783 B 7 | 2746 A 1 | 1784 D 5 |
| 6788 D 5 | 3801 D 8 | 3753 C 2 | 3785 D 7 | 2747 E 2 | 1785 E 3 |
| 6789 D 2 | 3802 D 6 | 3754 B 5 | 3786 D 7 | 2748 A 7 | 1786 C 4 |
| 6711 B 5 | 3803 D 7 | 3755 A 5 | 3788 D 7 | 2749 C 6 | 2781 B 7 |
| 6712 C 5 | 3804 E 6 | 3756 A 3 | 3789 D 7 | 2751 C 6 | 2782 B 7 |
| 6713 C 0 | 3805 C 2 | 3757 A 3 | 3710 B 6 | 2752 C 6 | 2783 B 7 |
| 6714 B 5 | 3807 B 2 | 3758 A 3 | 3711 D 7 | 2753 C 6 | 2784 B 6 |
| 6715 C 8 | 3808 B 1 | 3759 A 5 | 3712 B 6 | 2754 D 6 | 2785 C 7 |
| 6721 B 5 | 3810 D 6 | 3760 B 5 | 3713 B 6 | 2755 C 7 | 2786 D 7 |
| 6724 B 5 | 3811 D 5 | 3761 A 3 | 3714 B 6 | 2756 E 6 | 2787 B 6 |
| 6731 A 5 | 3812 C 5 | 3762 B 3 | 3715 C 7 | 2757 D 1 | 2788 B 6 |
| 6734 A 5 | 3813 D 7 | 3763 B 3 | 3716 B 7 | 2758 C 6 | 2789 A 6 |
| 7701 C 7 | 3814 B 4 | 3764 D 1 | 3717 C 7 | 2759 D 6 | 2711 A 6 |
| 7702 C 6 | 3815 B 3 | 3765 B 3 | 3718 C 7 | 2760 E 4 | 2712 B 5 |
| 7703 D 7 | 3816 C 2 | 3766 B 3 | 3719 D 7 | 2761 E 4 | 2713 B 5 |
| 7704 E 7 | 3817 B 7 | 3767 C 2 | 3720 B 6 | 2762 E 4 | 2714 A 5 |
| 7705 B 5 | 3818 A 1 | 3768 D 2 | 3721 B 7 | 2763 C 3 | 2715 B 6 |
| 7706 B 5 | 3819 B 5 | 3769 C 4 | 3722 B 7 | 2764 E 3 | 2716 B 5 |
| 7707 A 5 | 3820 B 5 | 3770 C 2 | 3723 B 7 | 2765 E 3 | 2717 A 4 |
| 7708 A 2 | 3821 A 5 | 3771 B 2 | 3724 A 7 | 2766 E 3 | 2718 A 4 |
| 7709 C 2 | 3822 A 5 | 3772 A 5 | 3725 A 7 | 2767 E 4 | 2719 A 4 |
| 7711 C 2 | 3823 A 5 | 3773 A 5 | 3726 A 7 | 2768 E 2 | 2720 B 2 |
| 7716 B 2 | 3824 A 5 | 3774 A 3 | 3727 B 6 | 2769 E 3 | 2721 B 4 |
| 7717 C 2 | 3825 B 5 | 3775 A 2 | 3728 A 6 | 2770 E 3 | 2722 B 3 |
| 7723 B 1 | 3826 A 5 | 3776 A 2 | 3729 B 6 | 2771 E 3 | 2723 B 4 |
| 7724 C 1 | 3827 A 5 | 3777 A 5 | 3730 B 6 | 2772 C 3 | 2724 A 5 |
| 7725 E 6 | 3828 E 6 | 3778 A 2 | 3731 A 6 | 2773 D 5 | 2725 B 5 |
| 7726 E 1 | 3829 C 5 | 3779 B 2 | 3732 A 6 | 2774 C 5 | 2726 B 5 |
| 7727 A 1 | 3831 C 6 | 3780 B 2 | 3733 A 5 | 2776 E 4 | 2727 A 3 |
|          | 3832 C 6 | 3781 B 3 | 3734 A 6 | 2777 D 5 | 2728 A 3 |
|          | 5702 C 7 | 3782 B 1 | 3735 A 6 | 2778 D 2 | 2729 A 3 |
|          | 5703 D 6 | 3784 B 2 | 3736 B 5 | 2779 C 4 | 2730 B 3 |
|          | 5704 E 2 | 3785 C 1 | 3737 B 5 | 2780 C 3 | 2731 B 3 |
|          | 5705 E 2 | 3786 D 1 | 3738 A 4 | 2781 D 1 | 2732 B 3 |
|          | 5706 B 4 | 3787 C 3 | 3739 A 4 | 2782 E 1 | 2733 D 2 |
|          | 5707 B 4 | 3788 C 1 | 3740 B 5 | 2783 E 2 | 2734 A 5 |
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|          | 5710 B 1 | 3791 E 6 | 3743 A 3 | 2786 C 1 | 2737 B 7 |
|          | 5711 A 5 | 3792 E 6 | 3744 B 4 | 2787 A 4 | 2738 A 3 |
|          | 5712 B 1 | 3793 D 6 | 3745 B 4 | 2788 A 3 | 2739 A 2 |
|          | 5713 E 6 | 3794 C 6 | 3746 D 2 | 2789 A 2 | 2740 A 2 |
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|          | 6702 D 2 | 3796 D 6 | 3748 B 4 | 2792 C 2 | 2742 B 2 |

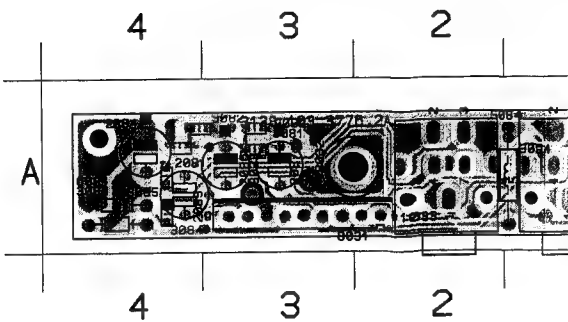


Power Switch Panel C.B.A



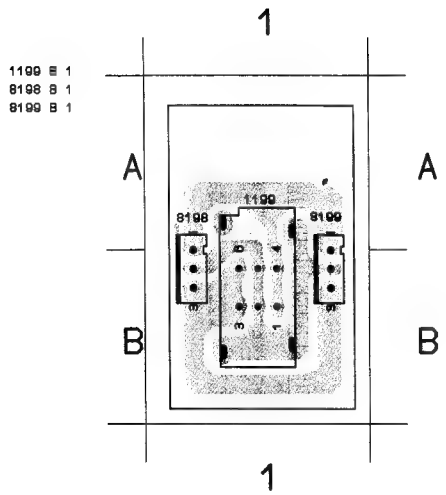
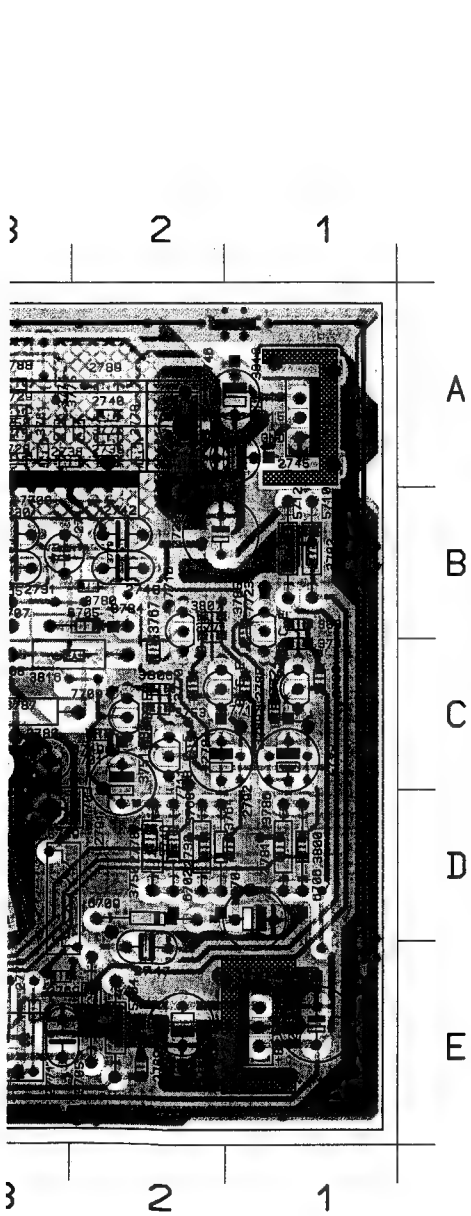
Earphone Panel C.B.A. (F)

|          |          |          |          |          |
|----------|----------|----------|----------|----------|
| 8033 A 3 | 5084 A 1 | 3085 A 4 | 3081 A 3 | 2084 A 4 |
| 8084 A 4 | 3083 A 1 | 3082 A 3 | 2085 A 4 |          |
| 8031 A 2 | 3084 A 1 | 3083 A 4 | 2086 A 3 |          |
| 8032 A 3 | 5083 A 1 | 3084 A 4 | 2087 A 3 |          |



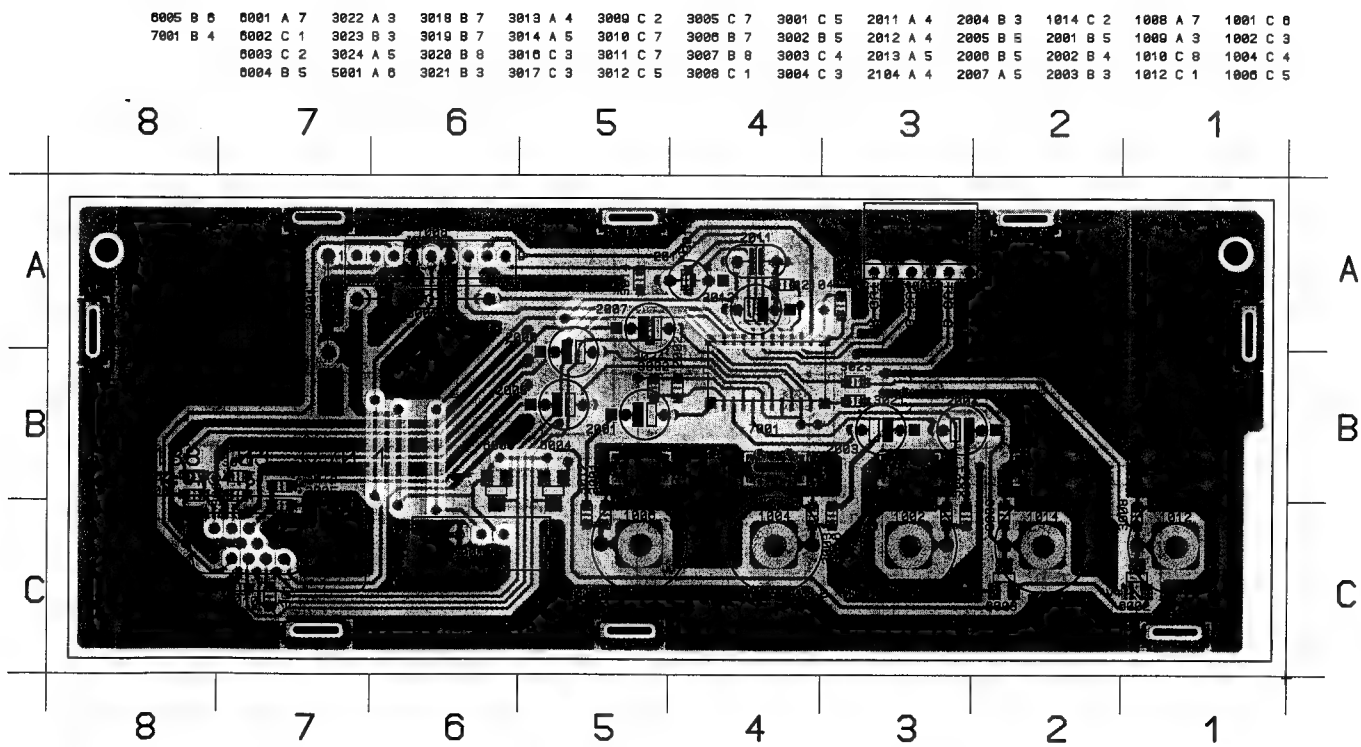
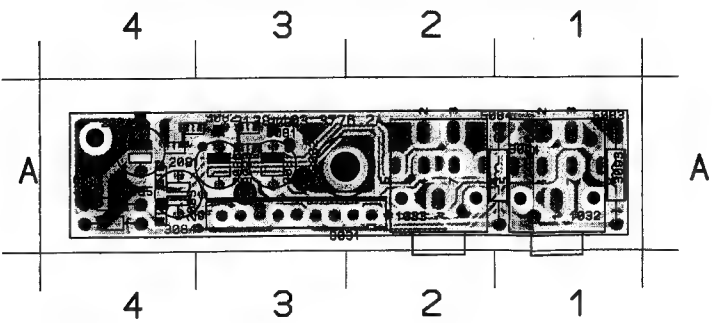
Power Switch Panel C.B.A. (G)

Terminal Panel C.B.A. (A1)



Earphone Panel C.B.A. (F)

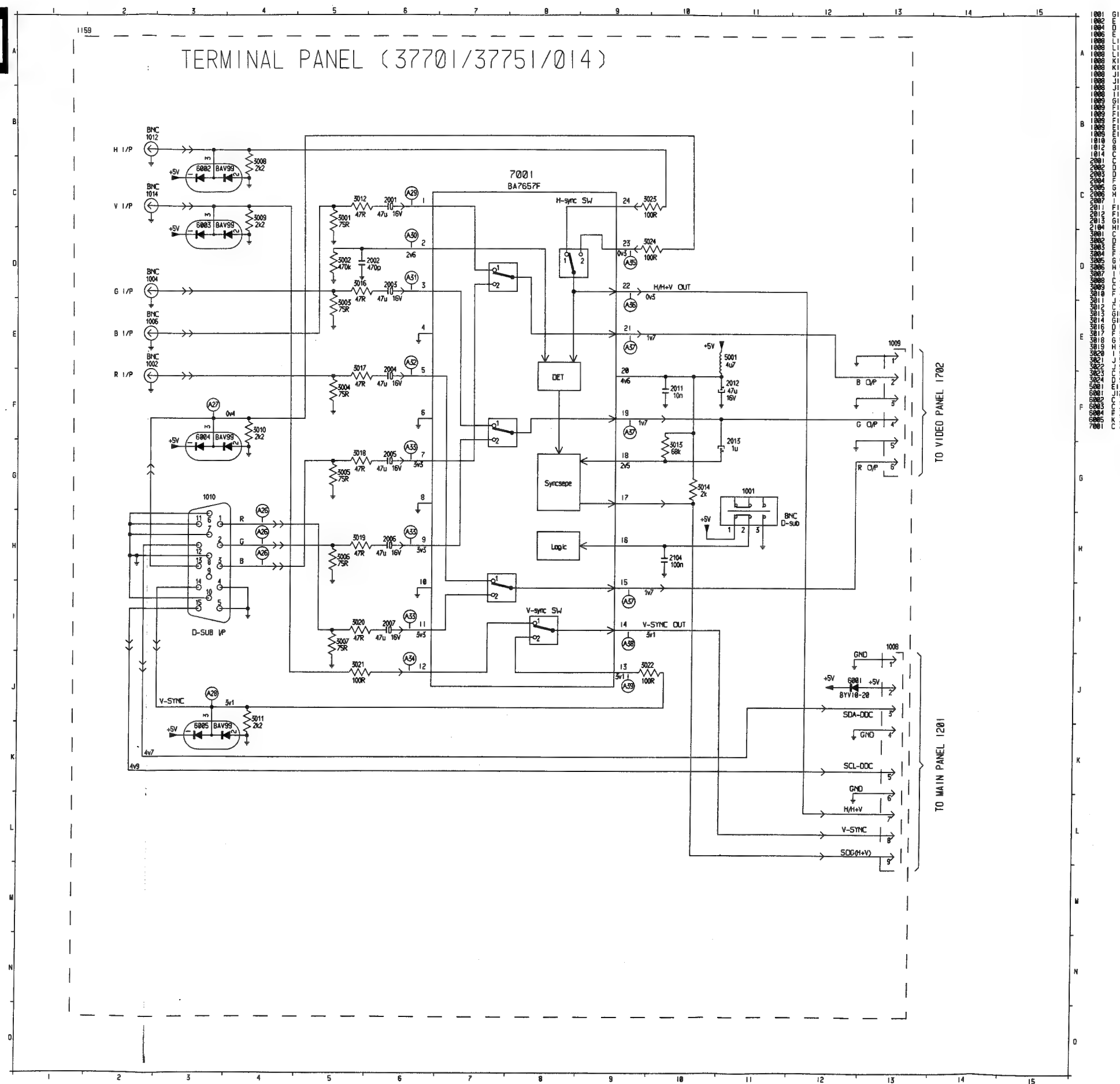
8093 A 3 5084 A 1 3095 A 4 3081 A 3 2084 A 4 1032 A 1  
5084 A 4 3093 A 1 3082 A 3 2085 A 4 1033 A 2  
8031 A 2 3004 A 1 3083 A 4 2086 A 3 2081 A 4  
8032 A 3 5083 A 1 3084 A 4 2087 A 3 2082 A 3



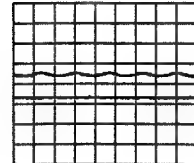


## Terminal Schematic Diagram

A1



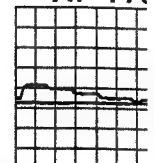
A1 7701-1

1 V/div AC  
10 mS/div

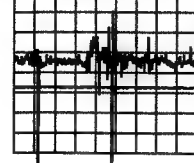
A4 7701-10

2 V/div AC  
5 uS/div

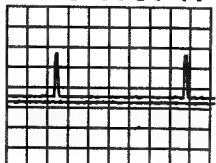
A7 7701-17

5 V/div AC  
5 uS/div

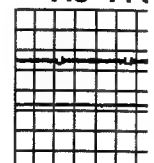
A2 7701-2

10 m V/div AC  
5 uS/div

A5 7701-11

5 V/div AC  
5 uS/div

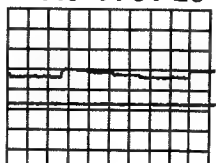
A8 7701-18

2 V/div AC  
5 mS/div

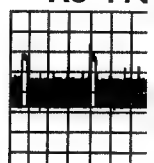
A2 7701-3

10 mV/div AC  
5 uS/div

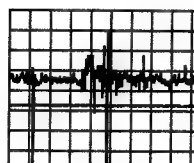
A6 7701-20

5 V/div AC  
5 uS/div

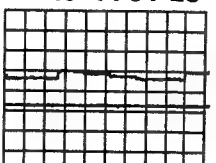
A9 7701-21

0.2 V/div AC  
5 mS/div

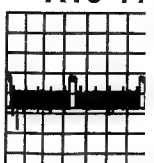
A2 7701-4

10 m V/div AC  
5 uS/div

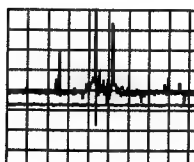
A6 7701-25

5 V/div AC  
5 uS/div

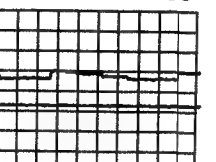
A10 7701-26

0.2 V/div AC  
5 mS/div

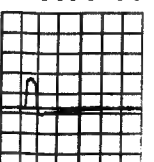
A3 7701-5

2 V/div AC  
5 uS/div

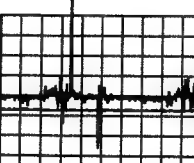
A6 7701-30

5 V/div AC  
5 uS/div

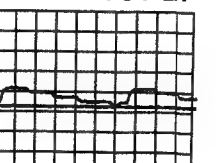
A11 7701-31

0.5 V/div AC  
5 uS/div

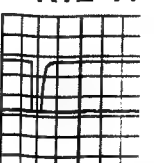
A4 7701-6

2 V/div AC  
5 uS/div

A7 7701-21

5 V/div AC  
5 uS/div

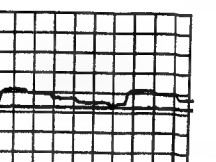
A12 7701-22

2 V/div AC  
5 uS/div

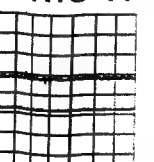
A4 7701-8

2 V/div AC  
5 uS/div

A7 7701-26

5 V/div AC  
5 uS/div

A13 7701-27

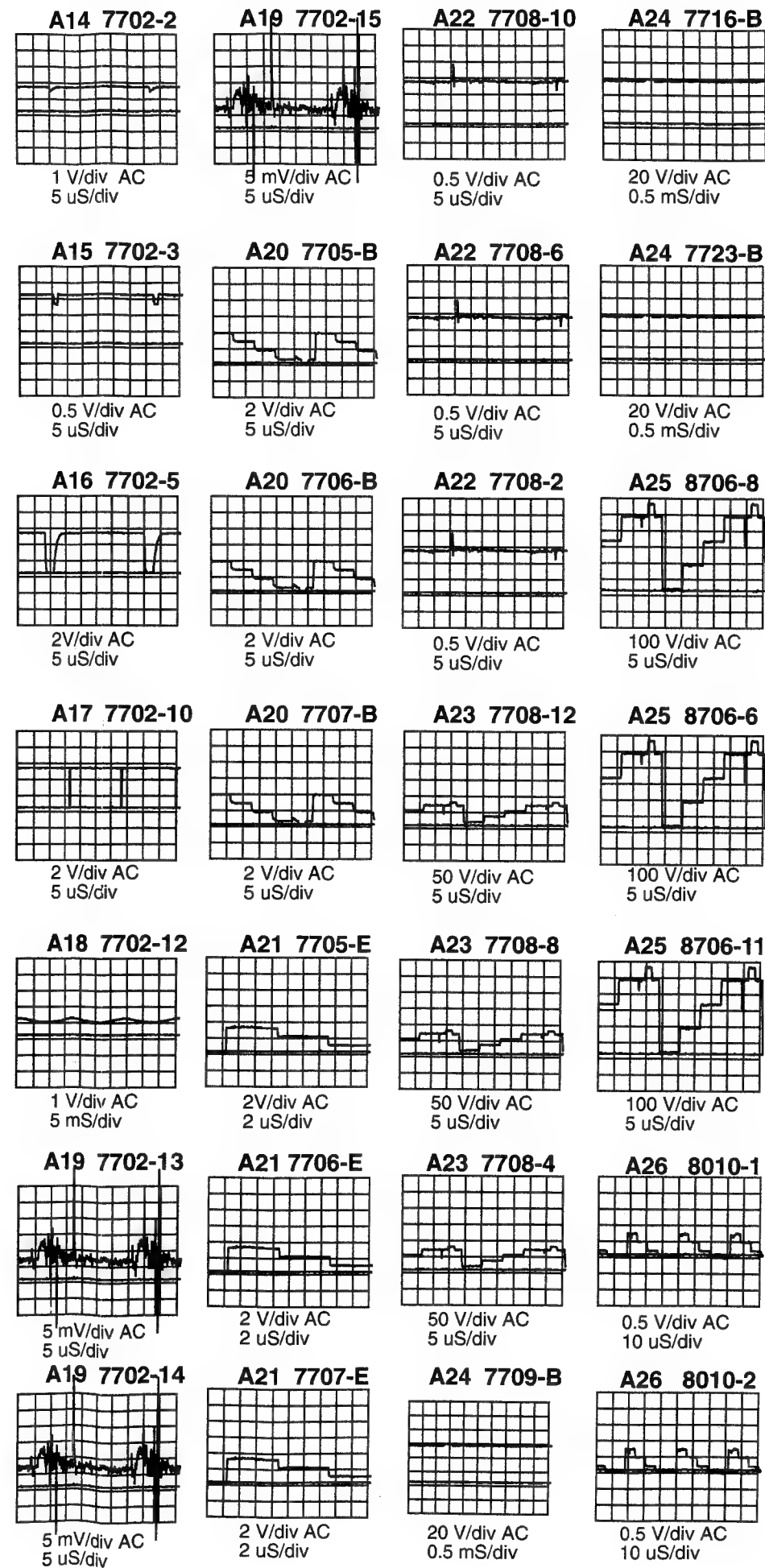
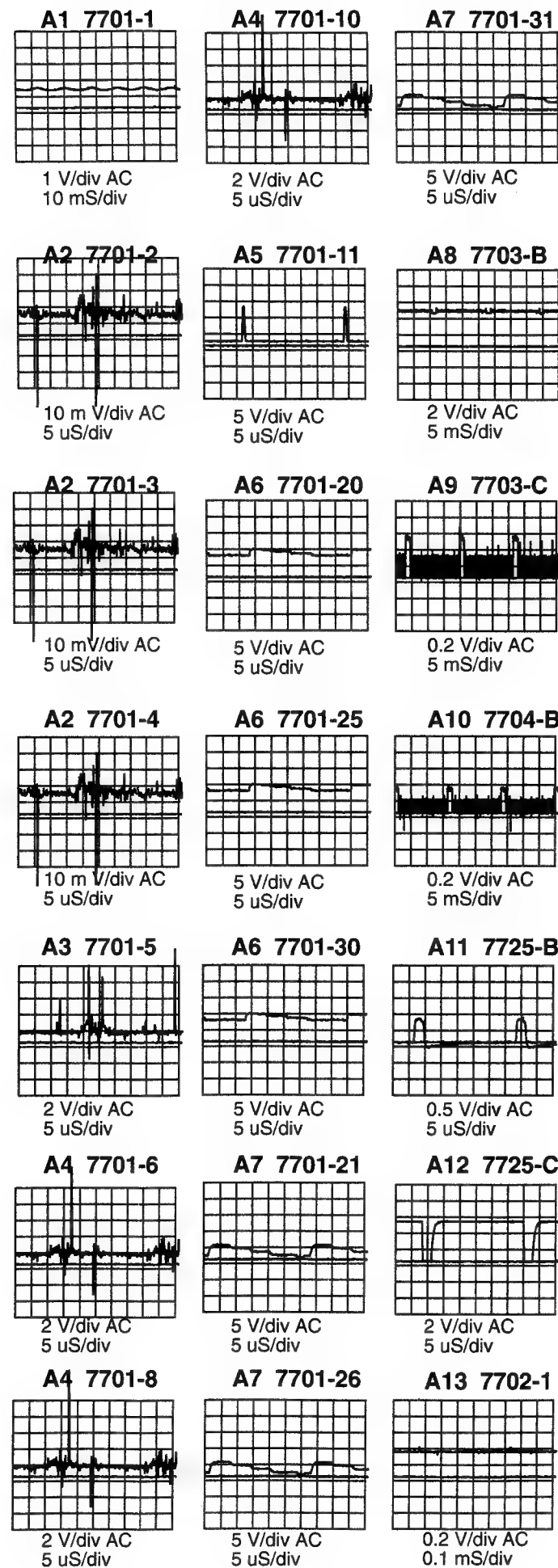
0.2 V/div AC  
0.1 mS/div

# Waveforms for Diagram A1 and A2

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1200

TO VIDEO PANEL 1702

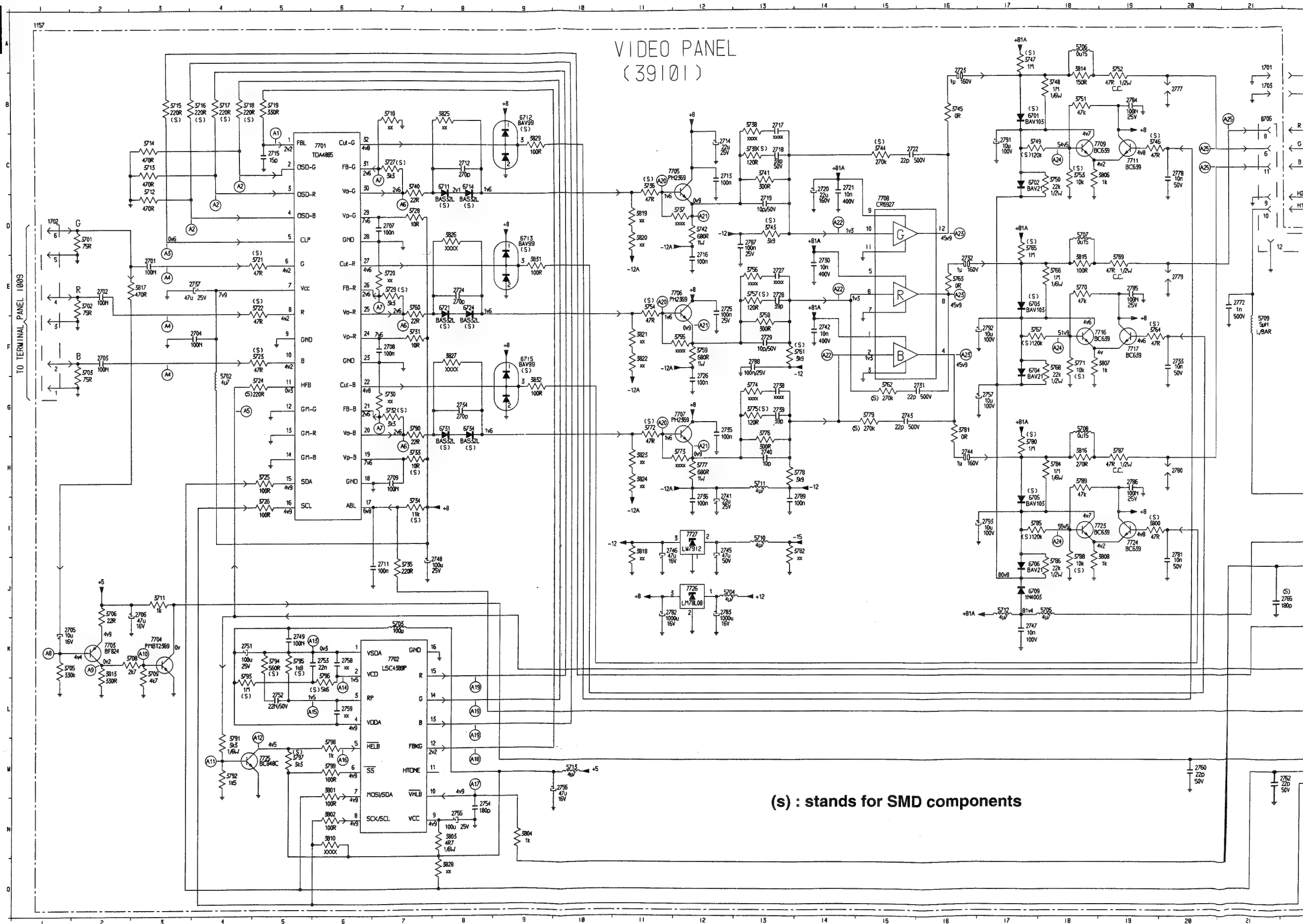
TO MAIN PANEL 1201

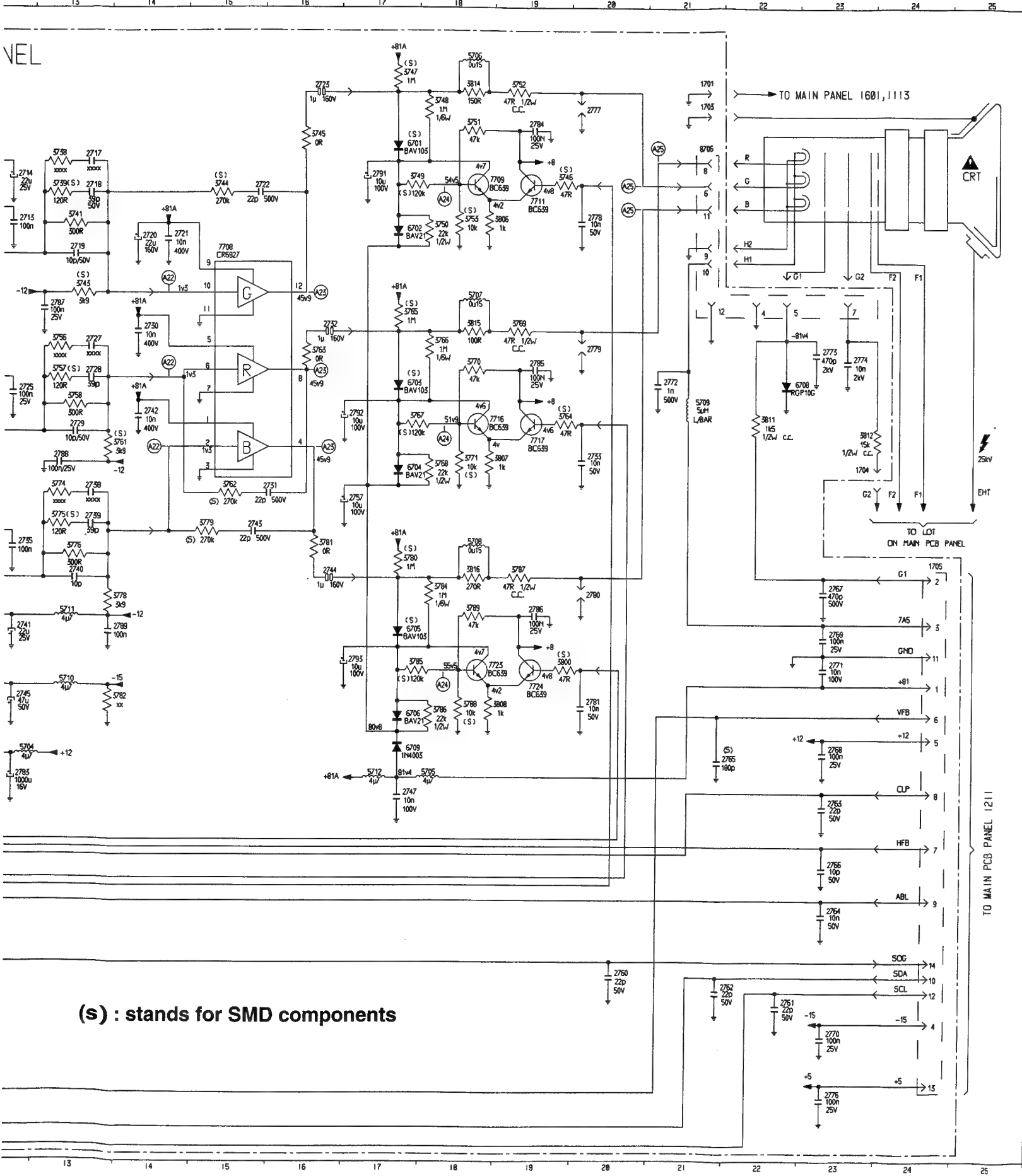




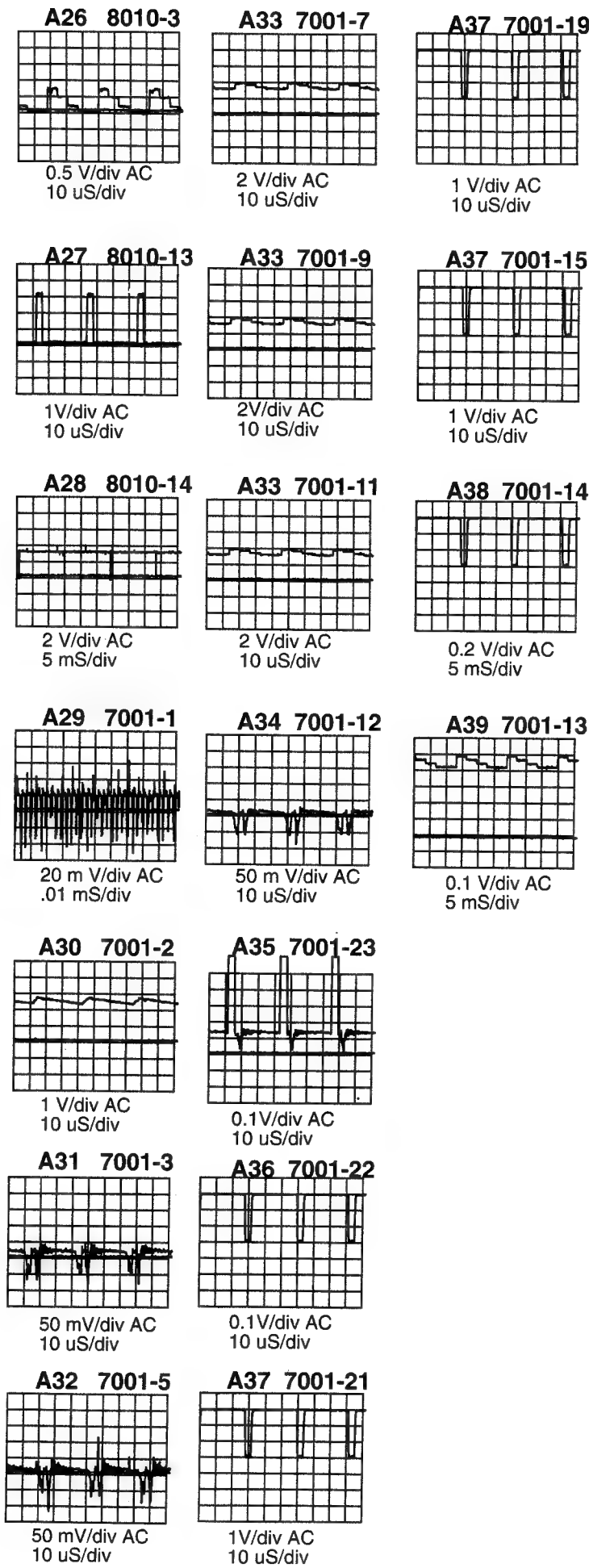
# Video Schematic Diagram

A2

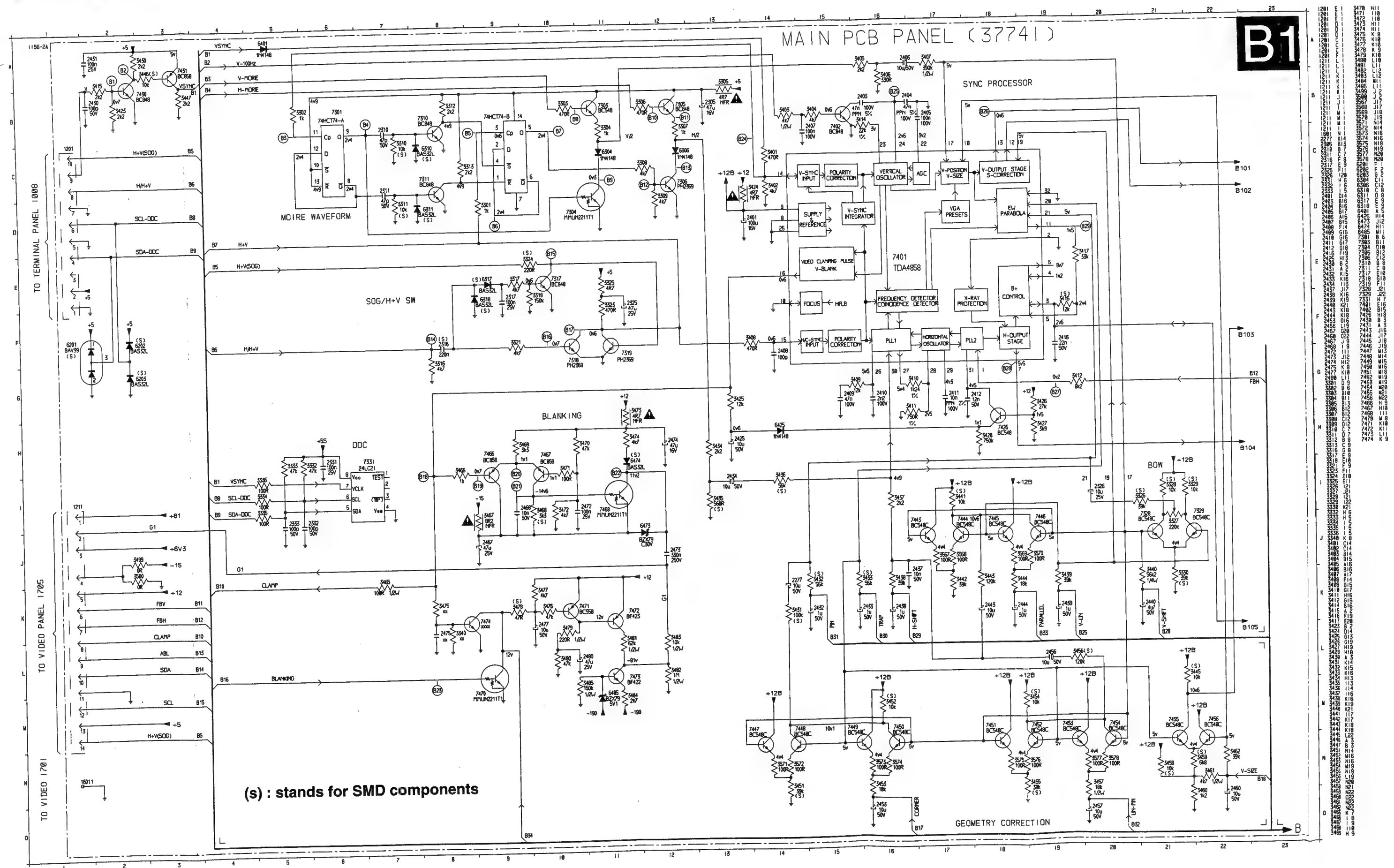




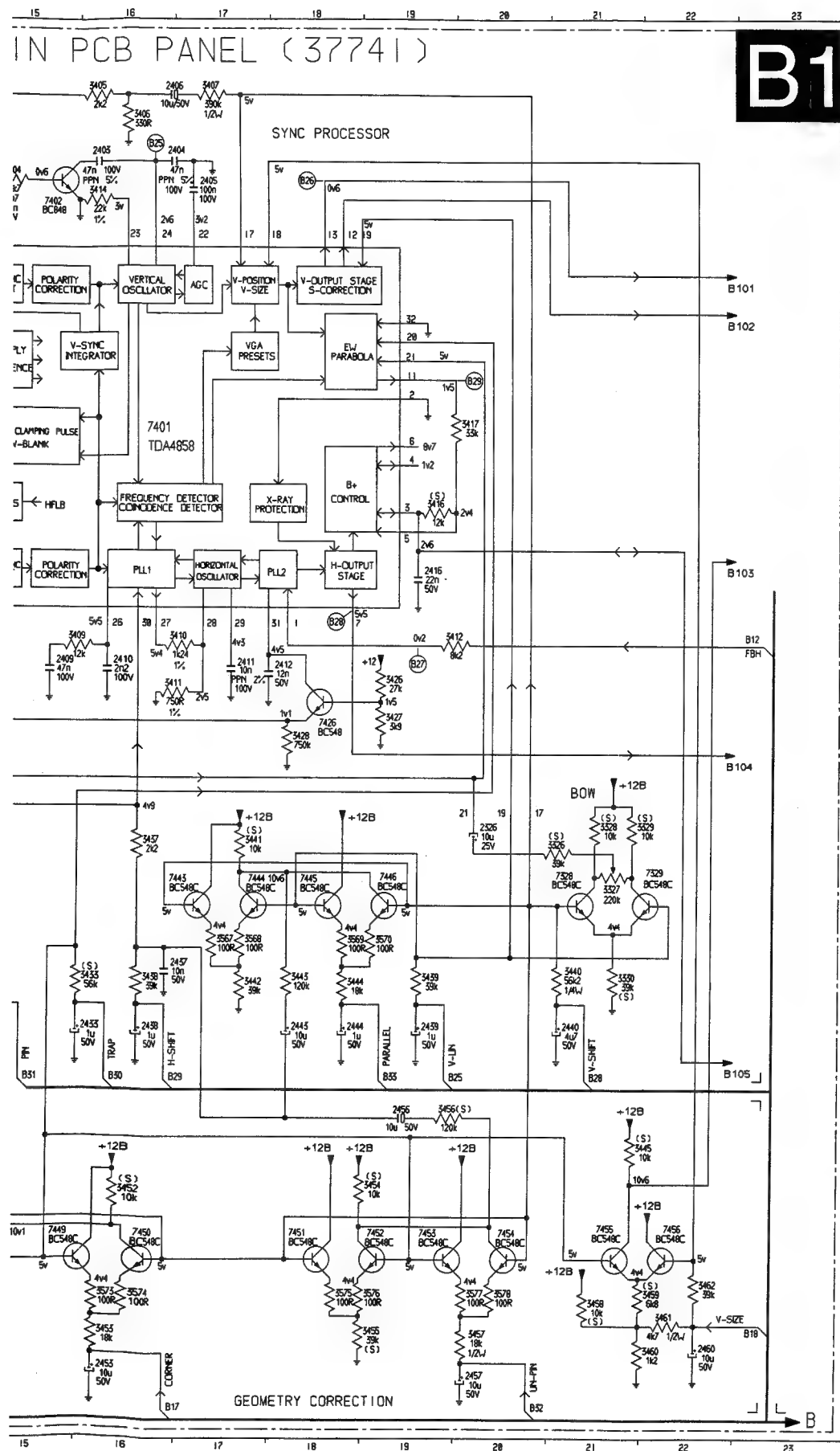
(s) : stands for SMD components



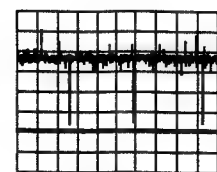
## Deflection Schematic Diagram



# Waveforms for Diagram B1 and B2

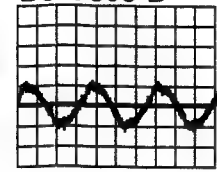


B1 7430-B



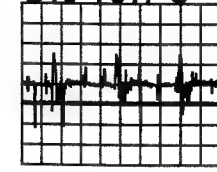
0.2 V/div AC  
5 mS/div

B8 7303-B



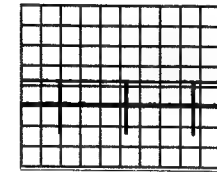
50 mV/div AC  
20 uS/div

B15 7317-C



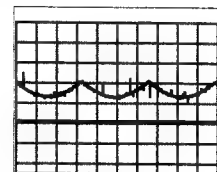
50 mV/div AC  
10 uS/div

B22 7468-C



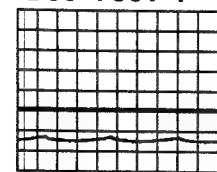
10 V/div AC  
5 mS/div

B29 7401-11



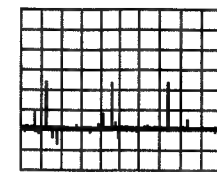
0.1 V/div AC  
5 mS/div

B36 7501-4



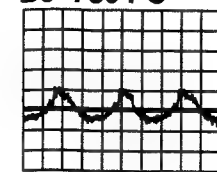
10 V/div AC  
5 mS/div

B2 7430-C



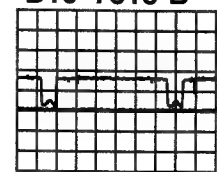
2 V/div AC  
5 mS/div

B9 7304-C



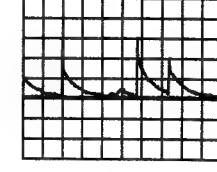
0.2 V/div AC  
5 mS/div

B16 7318-B



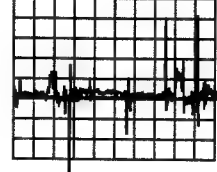
0.5 V/div AC  
5 uS/div

B23 7470-B



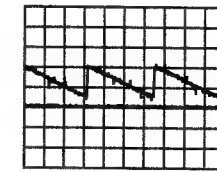
0.1 V/div AC  
5 uS/div

B30 7518-C



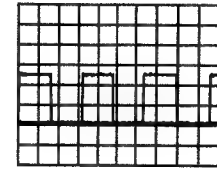
0.1 V/div AC  
5 uS/div

B37 7501-7



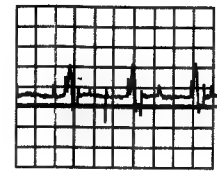
0.5 V/div AC  
5 mS/div

B3 7301-11



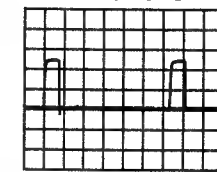
2 V/div AC  
5 mS/div

B10 7305-B



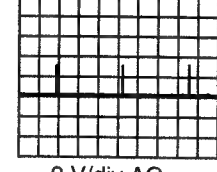
50 mV/div AC  
10 uS/div

B17 7318-C



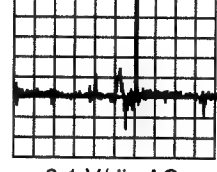
21 V/div AC  
5 uS/div

B24 7401-14



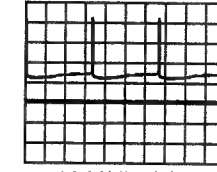
2 V/div AC  
5 mS/div

B31 7518-B



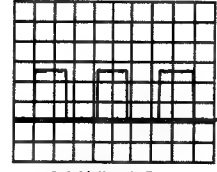
0.1 V/div AC  
5 uS/div

B38 7501-7



10 V/div AC  
5 mS/div

B4 7301-9

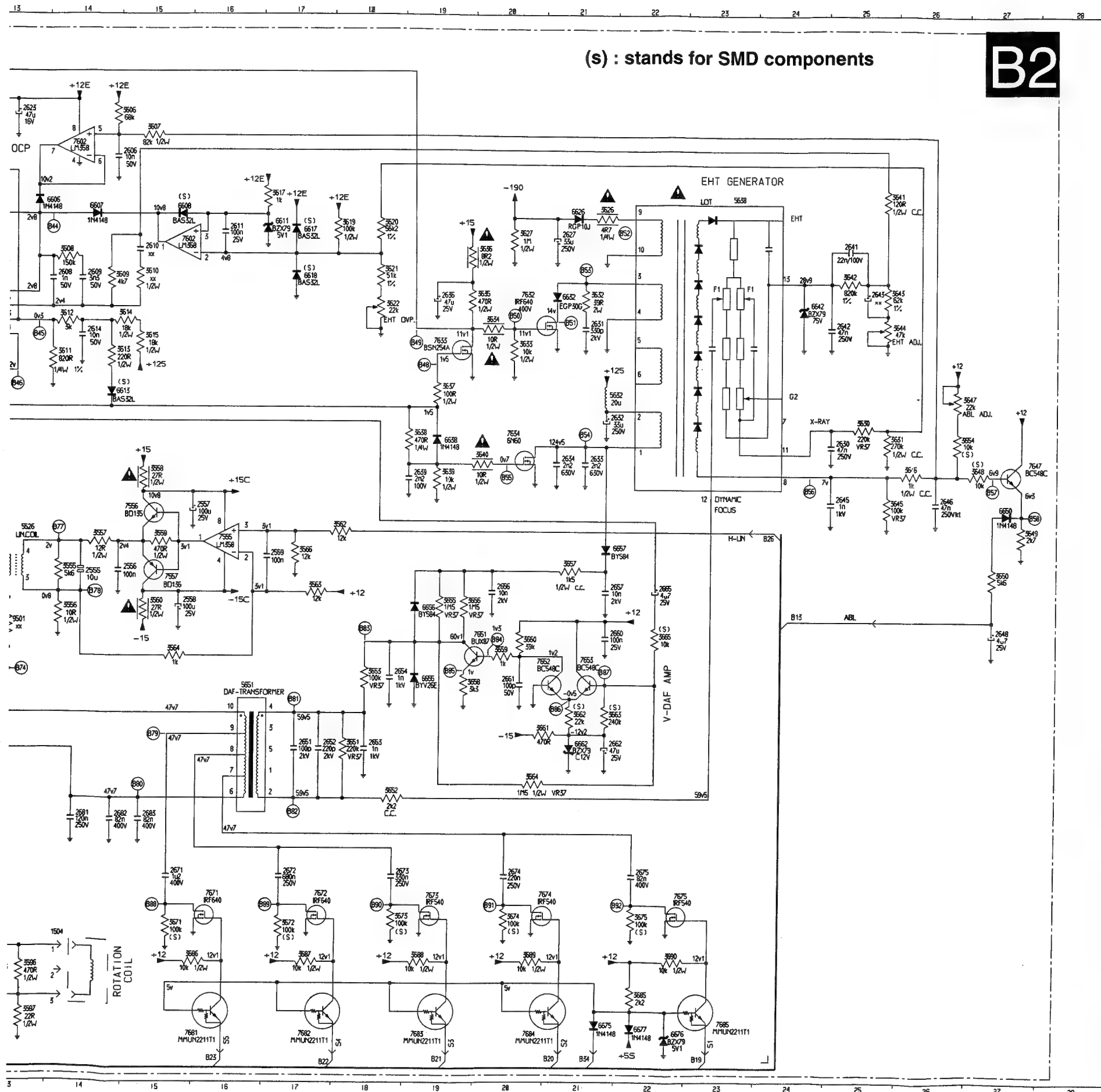


2 V/div AC  
5 mS/div

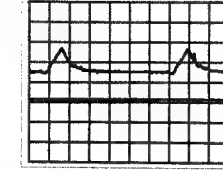


MAIN PCB PANEL (37741)

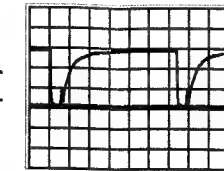
[illegible]



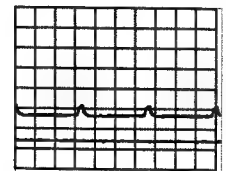
B43 7605-C

0.2 V/div AC  
5 μs/div

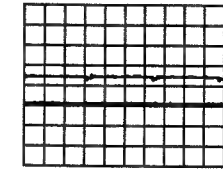
B50 7632-G

5 V/div AC  
5 μs/div

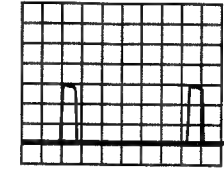
B57 7647-B

5 V/div AC  
5 ms/div

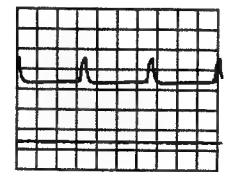
B44 7603-E

2 V/div AC  
5 μs/div

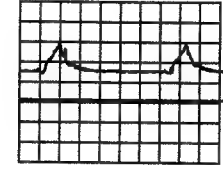
B51 7632-D

50 V/div AC  
5 μs/div

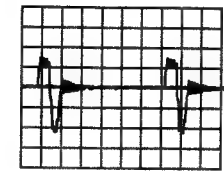
B58 7647-E

2 V/div AC  
5 ms/div

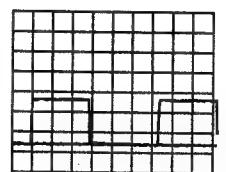
B45 7601-3

0.2 V/div AC  
5 μs/div

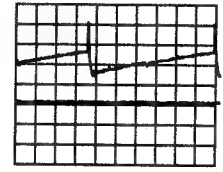
B52 5638-9

100 V/div AC  
5 μs/div

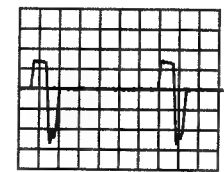
B59 7522-E

5 V/div AC  
5 μs/div

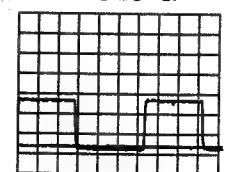
B46 7601-4

10 V/div AC  
5 μs/div

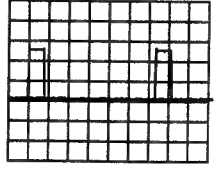
B53 5638-3

100 V/div AC  
5 μs/div

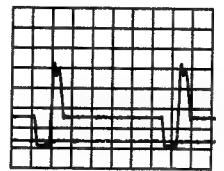
B60 7523-G

5 V/div AC  
5 μs/div

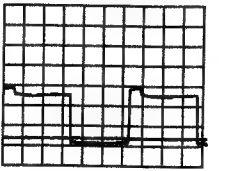
B47 7601-6

5 V/div AC  
5 μs/div

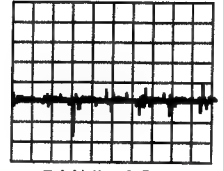
B54 5638-1

100 V/div AC  
5 μs/div

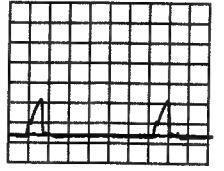
B61 7523-D

50 V/div AC  
5 μs/div

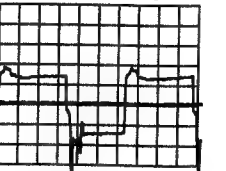
B48 7633-G

5 V/div AC  
5 μs/div

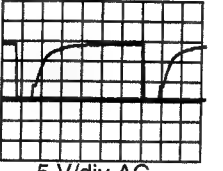
B55 7634-G

5 V/div AC  
5 μs/div

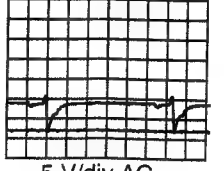
B62 5522-6

2 V/div AC  
5 μs/div

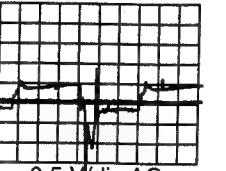
B49 7633-D

5 V/div AC  
5 μs/div

B56 5638-8

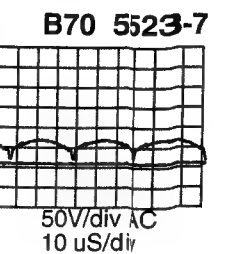
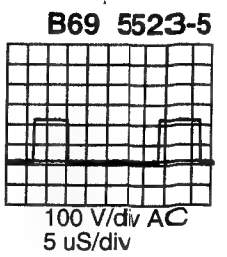
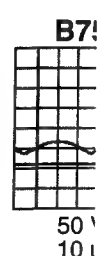
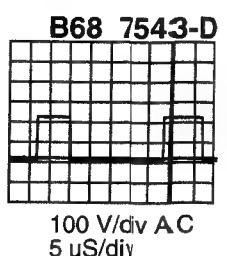
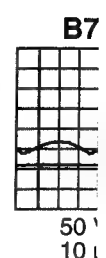
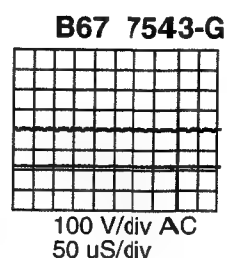
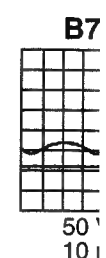
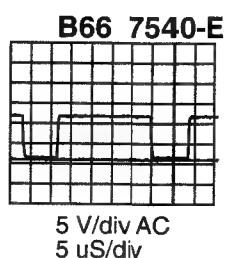
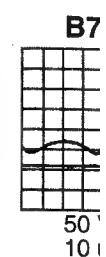
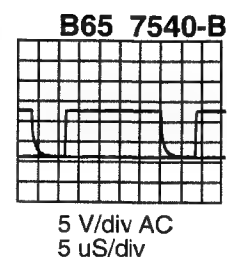
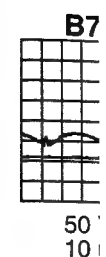
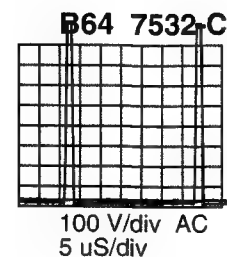
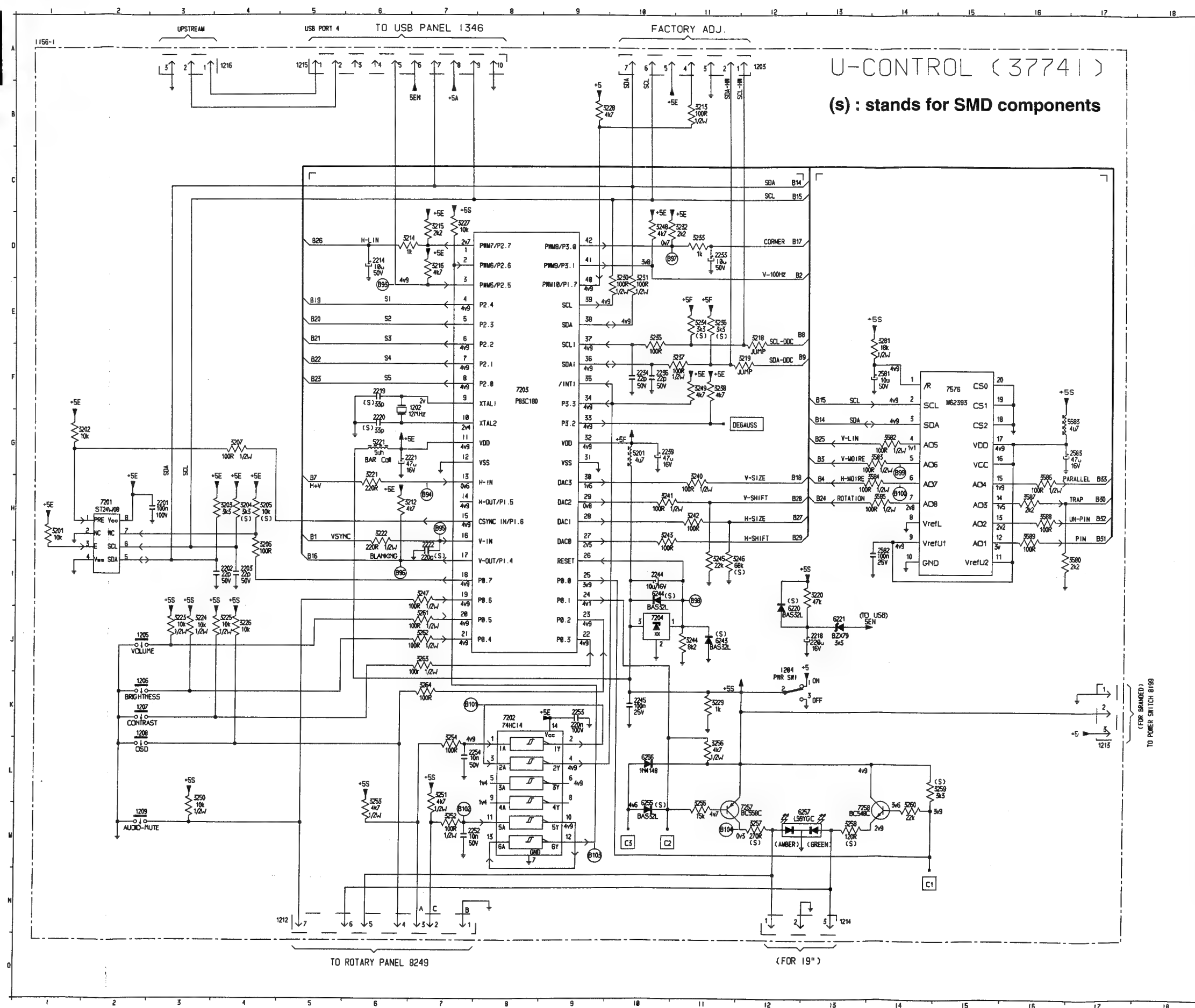
5 V/div AC  
5 μs/div

B63 5522-7

0.5 V/div AC  
5 μs/div

### U-CTRL Schematic Diagram

B3





I-CONTROL (37741)

i) : stands for SMD components

The circuit diagram shows the I-CONTROL (37741) IC connected to various components. The IC pins are labeled as follows:

- 1: /R 7576
- 2: SCL M62393
- 3: SDA
- 4: AO5
- 5: AO6
- 6: AO7
- 7: AO8
- 8: VrefL
- 9: VrefU1
- 10: GND
- 11: VrefU2
- 12: AD1
- 13: AD2
- 14: AD3
- 15: AD4
- 16: VCC
- 17: VDD
- 18: CS2
- 19: CS1
- 20: CS0

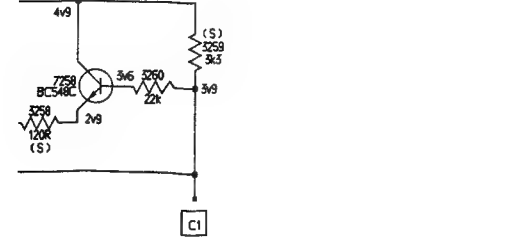
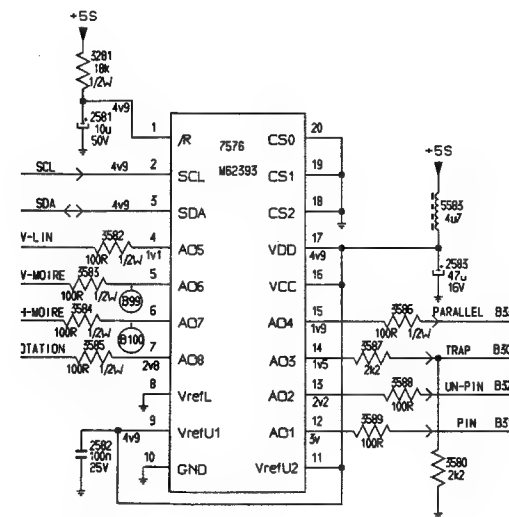
External components and connections include:

- +5S power supply connected to pin 1 through a 50V capacitor.
- SCL signal line connected to pin 2 through a 4v9 resistor.
- SDA signal line connected to pin 3 through a 4v9 resistor.
- V-LIN signal line connected to pin 4 through a 50V capacitor.
- V-MOIRE signal line connected to pin 5 through a 50V capacitor.
- +MOIRE signal line connected to pin 6 through a 50V capacitor.
- STATION signal line connected to pin 7 through a 50V capacitor.
- VrefL signal line connected to pin 8 through a 4v9 resistor.
- VrefU1 signal line connected to pin 9 through a 4v9 resistor.
- GND connection at pin 10.
- VrefU2 signal line connected to pin 11 through a 4v9 resistor.
- AD1, AD2, AD3, AD4 signal lines connected to pins 12, 13, 14, and 15 respectively.
- VCC connection at pin 16.
- VDD connection at pin 17.
- CS0, CS1, CS2 chip select lines connected to pins 20, 19, and 18 respectively.
- TRAP B50, UN-PIN B52, and PIN B51 output lines connected to pins 18, 17, and 16 respectively.
- Power supply (+5S) connected to pins 18, 17, and 16 through a 50V capacitor.
- A 50V capacitor is connected between pins 18 and 17.
- A 50V capacitor is connected between pins 17 and 16.
- A 50V capacitor is connected between pins 16 and 15.
- A 50V capacitor is connected between pins 15 and 14.
- A 50V capacitor is connected between pins 14 and 13.
- A 50V capacitor is connected between pins 13 and 12.
- A 50V capacitor is connected between pins 12 and 11.
- A 50V capacitor is connected between pins 11 and 10.
- A 50V capacitor is connected between pins 10 and 9.
- A 50V capacitor is connected between pins 9 and 8.
- A 50V capacitor is connected between pins 8 and 7.
- A 50V capacitor is connected between pins 7 and 6.
- A 50V capacitor is connected between pins 6 and 5.
- A 50V capacitor is connected between pins 5 and 4.
- A 50V capacitor is connected between pins 4 and 3.
- A 50V capacitor is connected between pins 3 and 2.
- A 50V capacitor is connected between pins 2 and 1.

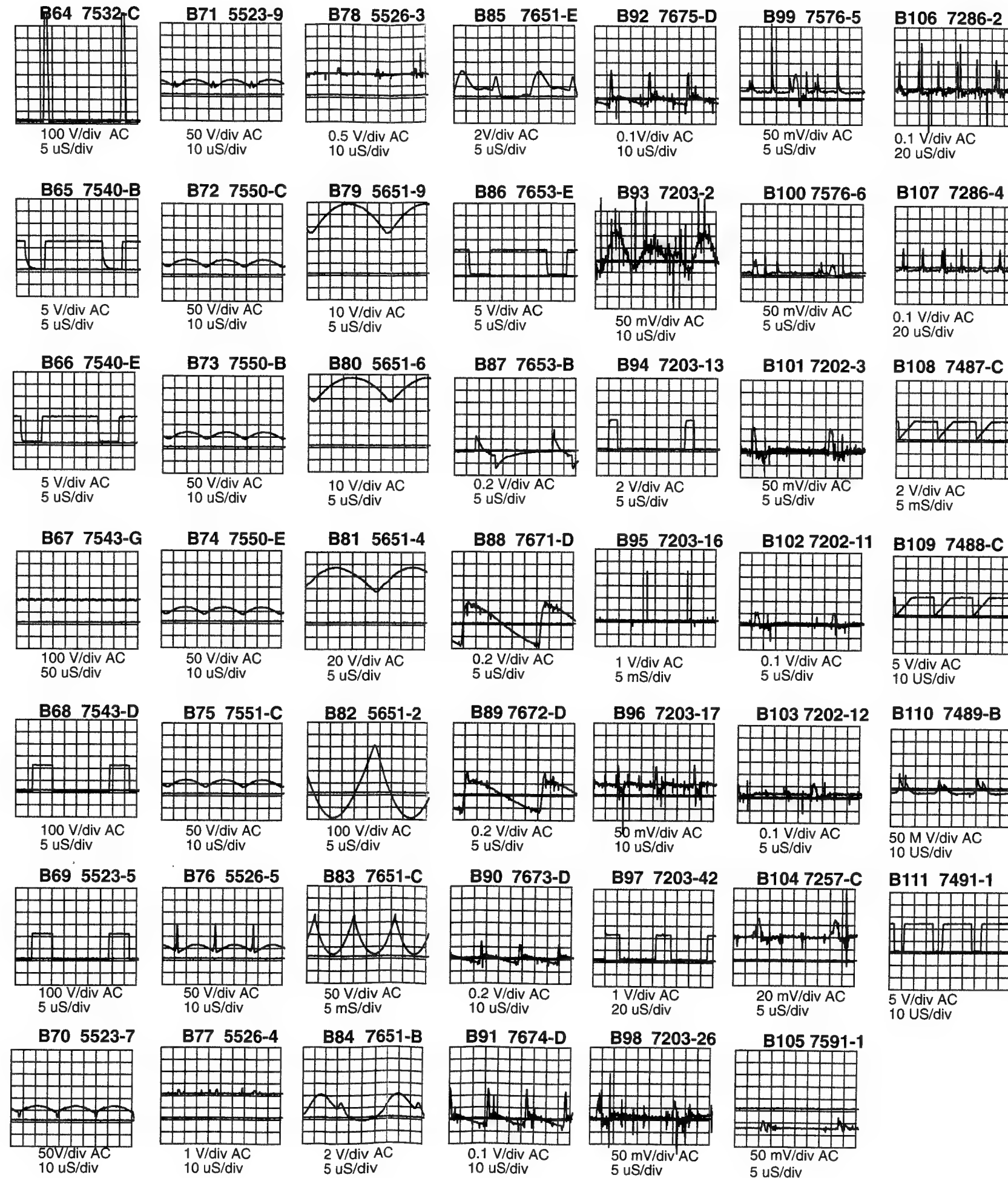
(FOR BRANDED)  
TO POWER SWITCH 8199

This small schematic diagram shows a transistor circuit. It includes a BC548C transistor, several resistors (values like 2k, 10k, 100k), and a capacitor labeled C1. The circuit appears to be a simple switch or amplifier stage.

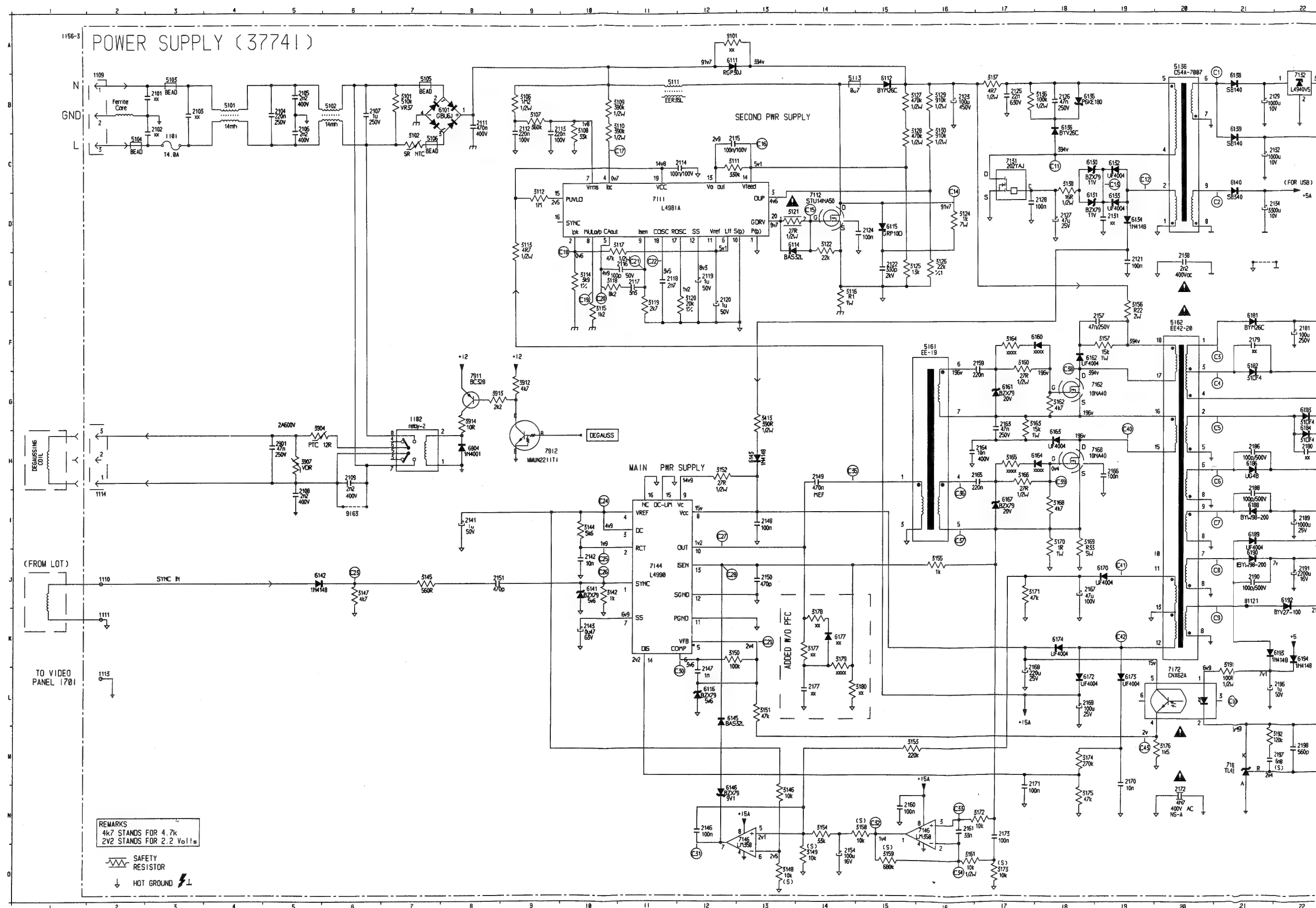
**SMD** : stands for SMD components

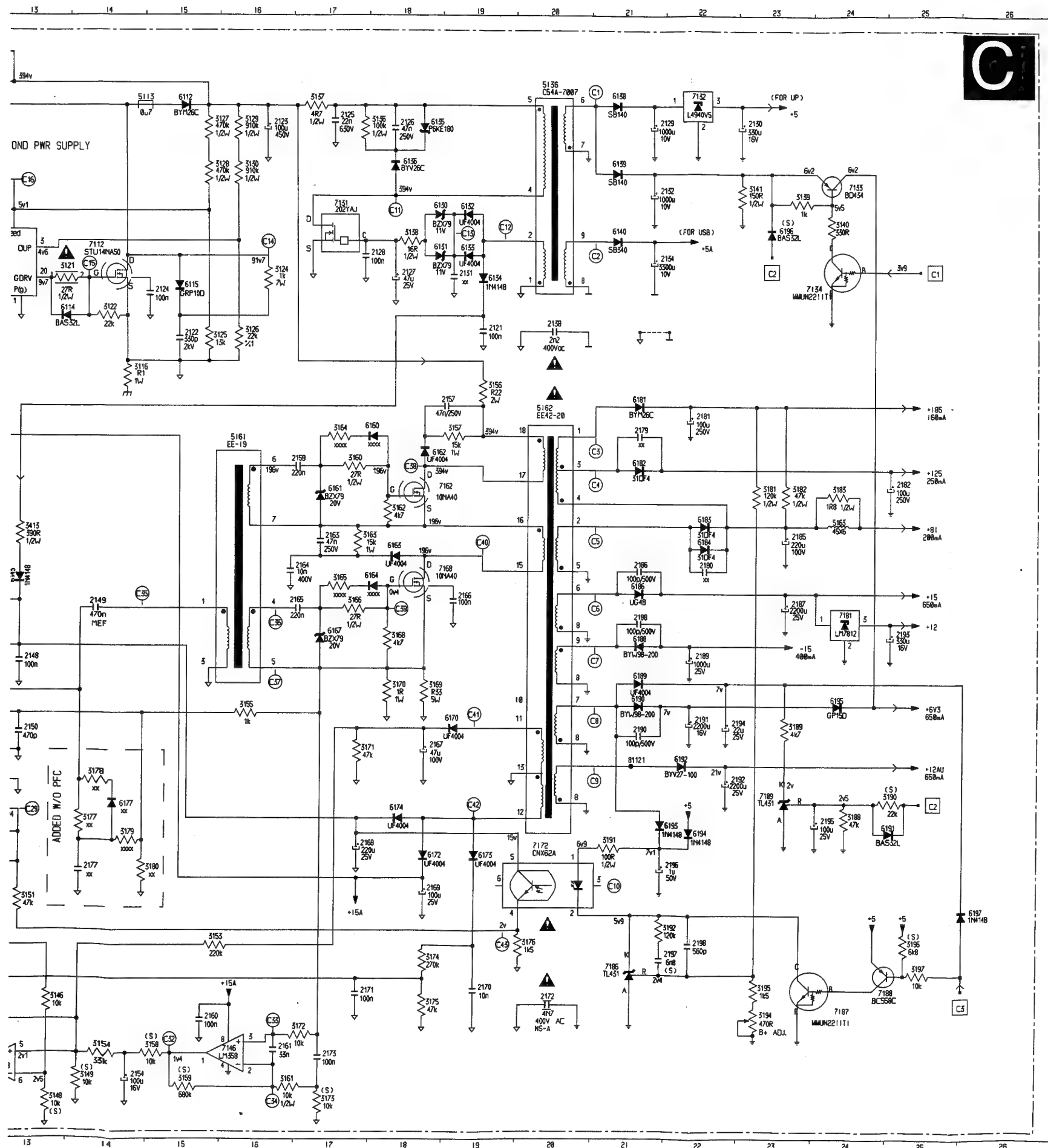


1214

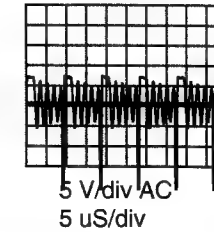


## Power Supply Schematic Diagram

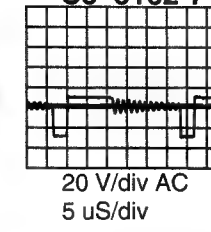




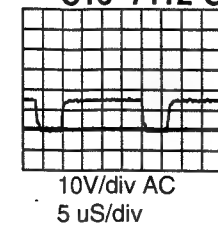
C1 5136-6



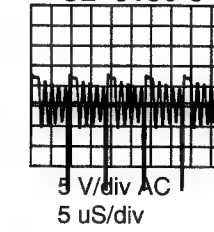
C8 5162-7



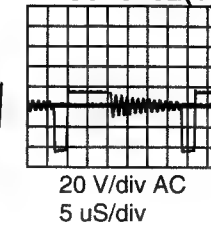
C15 7112-G



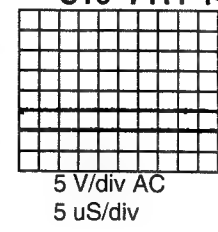
C2 5136-9



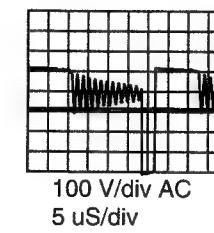
C9 6192(+)



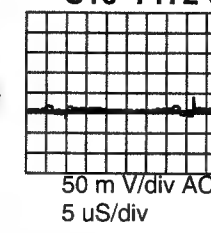
C16 7111-14



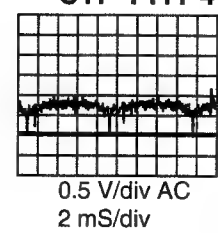
C3 5162-1



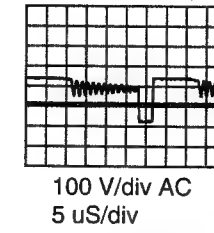
C10 7172-3



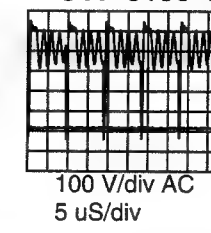
C17 7111-4



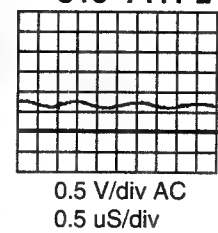
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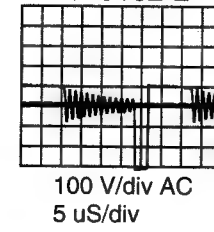
C11 5136-4



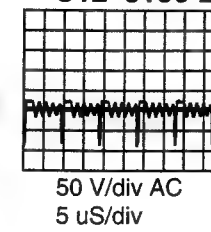
C18 7111-2



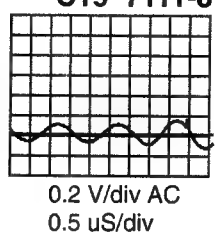
C5 5162-2



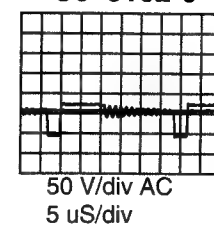
C12 5136-2



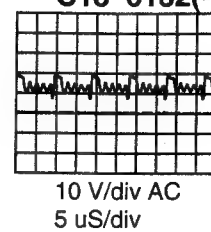
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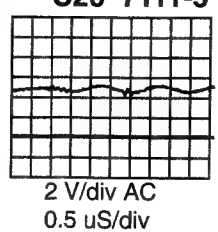
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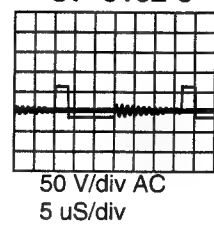
C13 6132(-)



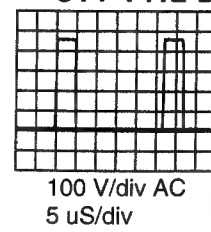
C20 7111-5



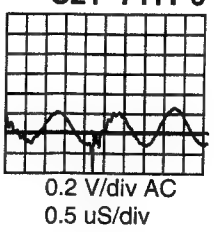
C7 5162-9



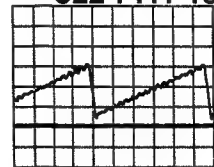
C14 7112-D



C21 7111-9

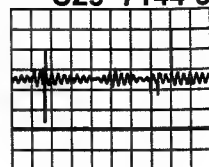


C22 7111-18



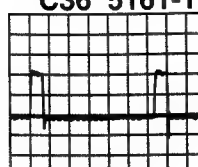
2 V/div AC  
5 uS/div

C29 7144-5



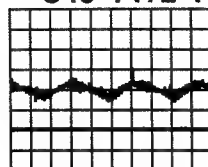
1 V/div AC  
5 uS/div

C36 5161-1



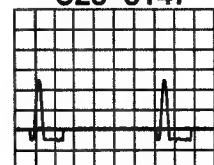
5 V/div AC  
5 uS/div

C43 7172-4



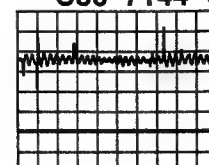
1 V/div AC  
10 uS/div

C23 3147



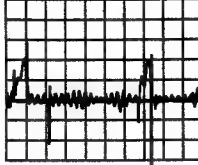
5 V/div AC  
5 uS/div

C30 7144-6



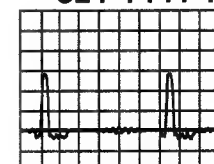
1 V/div AC  
5 uS/div

C37 5161-5



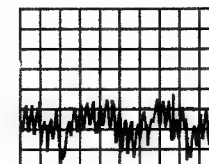
0.5 V/div AC  
5 uS/div

C24 7144-4



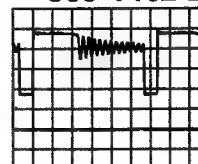
2 V/div AC  
5 uS/div

C31 7146-7



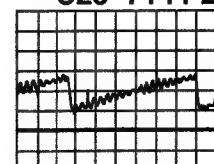
0.1 V/div AC  
5 uS/div

C38 7162-D



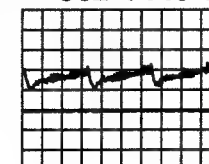
100 V/div AC  
5 uS/div

C25 7144-2



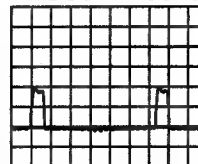
1 V/div AC  
5 uS/div

C32 7146-1



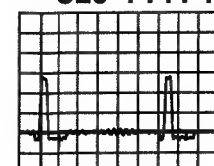
1 V/div AC  
10 uS/div

C39 7168-G



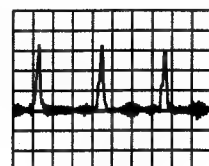
5 V/div AC  
5 uS/div

C26 7144-1



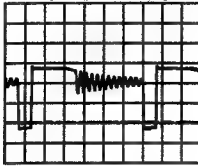
2 V/div AC  
5 uS/div

C33 7146-3



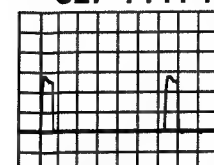
0.2 V/div AC  
10 uS/div

C40 7168-D



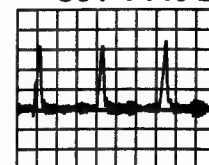
100 V/div AC  
5 uS/div

C27 7144-10



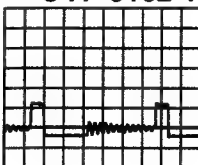
5 V/div AC  
5 uS/div

C34 7146-2



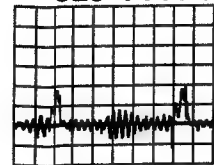
0.2 V/div AC  
10 uS/div

C41 5162-11



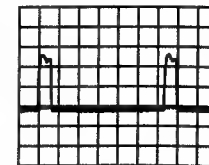
50 V/div AC  
5 uS/div

C28 7144-13



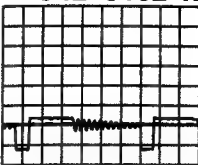
0.5 V/div AC  
5 uS/div

C35 5161-1



5 V/div AC  
5 uS/div

C42 5162-12

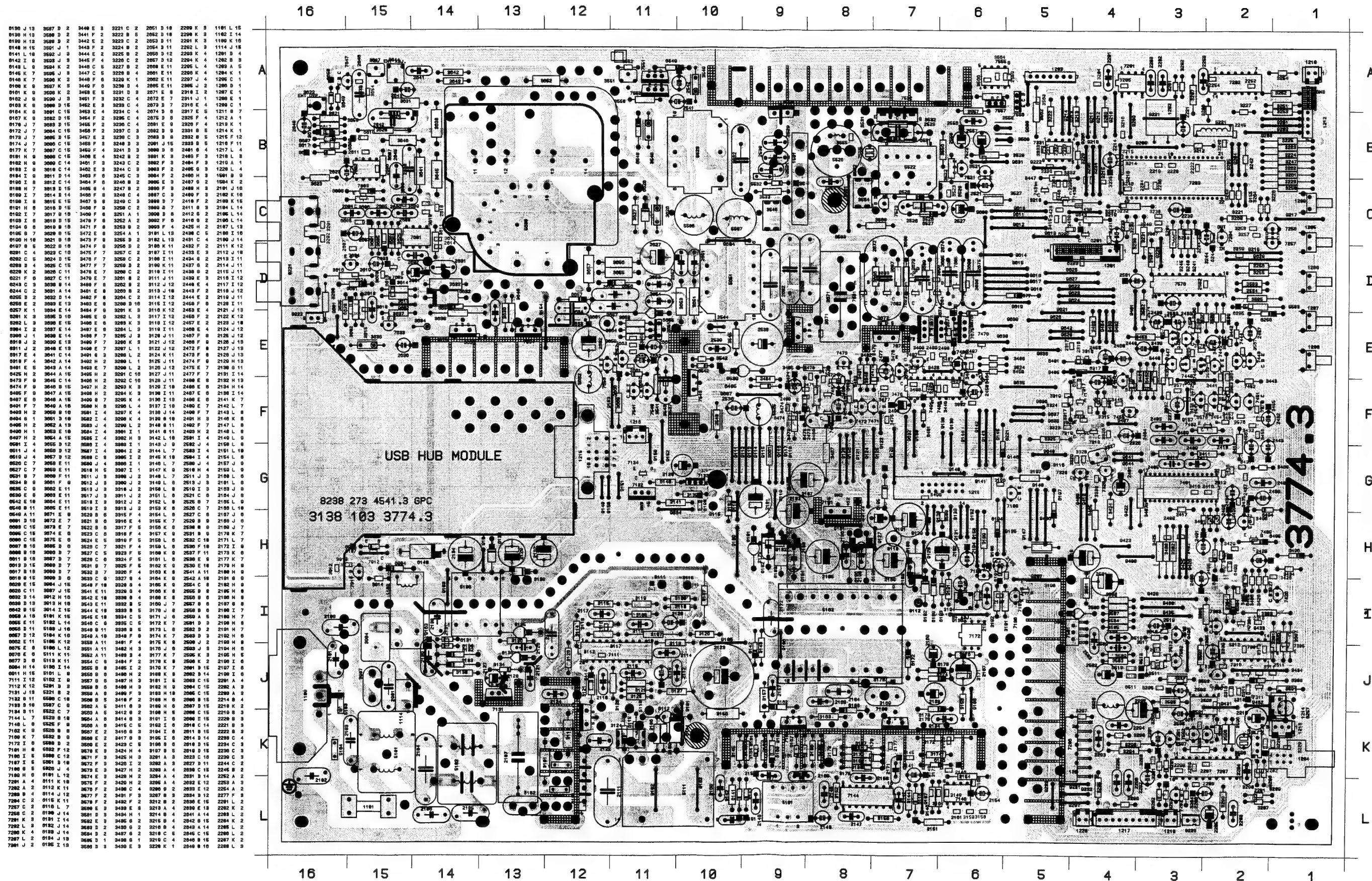


50 V/div AC  
5 uS/div

0130 0 7 7883 I 2 0130 J 18 3027 D 2 3440 E 3 3221 C 2 2051 D 10 2280 K 3 1101 L 16  
0131 H 0 7884 I 2 0130 H 13 3028 D 2 3441 F 2 3222 B 8 2052 D 10 2280 K 3 1102 I 14  
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0133 H 0 7886 J 2 0130 H 13 3031 J 1 3443 F 2 3224 B 2 2054 D 11 2282 L 3 1114 J 10  
0134 K 0 7810 J 2 0141 L 10 3022 J 3 3444 E 2 3225 B 8 2050 D 12 2283 K 4 1201 D 4  
0135 H 0 7811 J 2 0142 I 0 3023 J 3 3445 F 4 3226 C 2 2057 D 12 2284 K 4 1202 B 3  
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0137 H 16 7818 F 4 0145 K 7 3025 J 3 3447 C 5 3228 B 4 2051 E 11 2286 K 4 1204 K 1  
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0130 B 0 7820 B 4 0108 K 0 3027 K 3 3449 F 0 3230 D 4 2055 E 11 2288 J 2 1206 B 1  
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0157 F 0 7853 F 2 0188 J 9 3025 E 15 3467 F 3 3249 C 2 2103 F 2 2103 K 11  
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0161 H 0 7857 F 4 0194 B 0 3029 D 15 3471 F 3 3253 B 2 2053 F 2 2107 L 13  
0162 L 18 7858 F 0 0195 B 7 3029 D 15 3472 F 3 3254 A 1 2101 L 10 2436 C 5 2108 I 10  
0163 J 14 7859 F 0 0196 H 10 3021 B 10 3473 F 3 3255 D 3 2102 L 13 2431 C 4 2109 J 14  
0201 B 1 7870 E 0 0197 B 5 3022 D 15 3474 F 3 3256 B 2 2103 K 11 2432 F 2 2111 K 12  
0202 B 1 7871 F 7 0201 K 7 3023 C 10 3475 F 3 3257 B 2 2104 K 11 2433 E 2 2112 J 10  
0203 B 1 7872 F 7 0202 C 5 3024 D 15 3476 F 7 3258 C 2 2105 J 11 2434 B 2 2113 I 11  
0204 B 2 7873 E 0 0203 B 4 3025 C 15 3477 F 7 3259 D 2 2106 K 11 2437 B 2 2114 J 11  
0205 B 2 7874 E 7 0204 K 2 3026 C 11 3478 E 7 3260 C 2 2107 J 11 2438 B 2 2115 J 11  
0206 C 4 7880 F 7 0205 J 2 3027 C 10 3479 F 7 3261 B 2 2108 J 11 2439 B 2 2116 J 11  
0207 I 6 7887 E 7 0206 C 3 3028 B 14 3480 F 8 3262 B 2 2109 J 12 2440 E 4 2117 I 12  
0208 B 0 7888 E 0 0207 A 2 3029 A 14 3481 E 8 3263 B 2 2110 J 10 2441 F 2 2118 J 12  
0209 B 4 7889 H 2 0208 B 2 3030 D 14 3482 F 3 3264 C 2 2111 J 12 2442 E 2 2119 J 11  
0210 A 4 7890 H 2 0209 B 2 3031 D 13 3483 E 3 3265 C 2 2112 J 11 2443 E 2 2120 H 11  
0211 B 4 7891 F 7 0210 K 1 3032 E 14 3484 F 0 3266 K 3 2113 K 12 2444 E 4 2121 J 13  
0212 B 4 7892 J 4 0211 K 3 3033 D 10 3485 E 0 3267 L 3 2114 I 12 2445 F 2 2122 K 12  
0213 B 0 7893 J 3 0212 K 3 3034 E 15 3486 E 0 3268 K 3 2115 I 12 2446 E 2 2123 J 10  
0214 A 5 7894 J 3 0213 K 3 3035 E 14 3487 I 3 3269 L 3 2116 I 11 2447 E 4 2124 J 12  
0215 B 4 7895 B 0 0214 K 1 3036 E 14 3488 F 7 3270 J 3 2117 J 11 2448 F 0 2125 J 12  
0216 C 4 7896 B 0 0215 J 2 3037 E 13 3489 F 7 3271 K 3 2118 J 12 2449 F 0 2126 J 12  
0217 F 1 7897 C 15 0216 J 2 3038 E 13 3490 E 7 3272 L 1 2119 J 12 2450 E 2 2127 B 13  
0218 C 4 7898 J 7 0217 J 2 3039 E 13 3491 B 3 3273 L 1 2120 K 11 2451 E 2 2128 J 13  
0219 B 0 7899 B 11 0218 J 4 3040 E 14 3492 H 2 3274 L 1 2121 J 11 2452 F 0 2129 H 13  
0220 C 3 7900 F 11 0219 E 5 3041 A 14 3493 E 7 3275 L 2 2122 J 12 2453 E 2 2130 B 11  
0221 B 4 7901 E 2 0220 E 2 3042 A 13 3494 J 4 3276 L 2 2123 J 12 2454 E 2 2131 J 13  
0222 B 0 7902 A 11 0221 F 0 3043 C 14 3495 H 2 3277 C 10 2124 J 11 2455 E 2 2132 H 13  
0223 L 4 7903 A 11 0222 F 0 3044 B 15 3496 K 3 3278 K 3 2125 J 11 2456 E 0 2134 H 14  
0224 B 4 7904 A 0 0223 F 0 3045 A 15 3497 H 2 3279 K 3 2126 J 11 2457 E 0 2135 I 14  
0225 B 4 7905 A 0 0224 F 0 3046 A 15 3498 H 2 3280 K 3 2127 J 11 2458 E 0 2136 I 14  
0226 B 4 7906 A 0 0225 F 0 3047 A 15 3499 H 2 3281 K 3 2128 J 11 2459 E 0 2137 K 7  
0227 L 4 7907 A 0 0226 F 0 3048 A 15 3500 L 7 3282 L 3 2129 J 11 2460 E 0 2138 J 13  
0228 L 4 7908 A 0 0227 F 0 3049 A 15 3501 L 7 3283 L 3 2130 J 11 2461 E 0 2139 J 13  
0229 B 4 7909 A 0 0228 F 0 3050 A 15 3502 L 7 3284 L 3 2131 J 11 2462 E 0 2140 L 8  
0230 B 4 7910 A 0 0229 F 0 3051 A 15 3503 L 7 3285 L 3 2132 J 11 2463 E 0 2141 K 8  
0231 L 4 7911 A 11 0230 F 0 3052 A 15 3504 L 7 3286 L 3 2133 J 11 2464 E 0 2142 L 8  
0232 L 4 7912 A 11 0231 F 0 3053 A 15 3505 L 7 3287 L 3 2134 J 11 2465 E 0 2143 L 8  
0233 B 4 7913 A 11 0232 F 0 3054 A 15 3506 L 7 3288 L 3 2135 J 11 2466 E 0 2144 L 8  
0234 B 4 7914 A 11 0233 F 0 3055 A 15 3507 L 7 3289 L 3 2136 J 11 2467 E 0 2145 L 8  
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0236 B 4 7916 A 11 0235 F 0 3057 A 15 3509 L 7 3291 L 3 2138 J 11 2469 E 0 2147 L 8  
0237 B 4 7917 A 11 0236 F 0 3058 A 15 3510 L 7 3292 L 3 2139 J 11 2470 E 0 2148 L 8  
0238 B 4 7918 A 11 0237 F 0 3059 A 15 3511 L 7 3293 L 3 2140 J 11 2471 E 0 2149 L 8  
0239 B 4 7919 A 11 0238 F 0 3060 A 15 3512 L 7 3294 L 3 2141 J 11 2472 E 0 2150 L 8  
0240 B 4 7920 A 11 0239 F 0 3061 A 15 3513 L 7 3295 L 3 2142 J 11 2473 E 0 2151 L 8  
0241 B 4 7921 A 11 0240 F 0 3062 A 15 3514 L 7 3296 L 3 2143 J 11 2474 E 0 2152 L 8  
0242 B 4 7922 A 11 0241 F 0 3063 A 15 3515 L 7 3297 L 3 2144 J 11 2475 E 0 2153 L 8  
0243 B 4 7923 A 11 0242 F 0 3064 A 15 3516 L 7 3298 L 3 2145 J 11 2476 E 0 2154 L 8  
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0245 B 4 7925 A 11 0244 F 0 3066 A 15 3518 L 7 3300 L 3 2147 J 11 2478 E 0 2156 L 8  
0246 B 4 7926 A 11 0245 F 0 3067 A 15 3519 L 7 3301 L 3 2148 J 11 2479 E 0 2157 L 8  
0247 B 4 7927 A 11 0246 F 0 3068 A 15 3520 L 7 3302 L 3 2149 J 11 2480 E 0 2158 L 8  
0248 B 4 7928 A 11 0247 F 0 3069 A 15 3521 L 7 3303 L 3 2150 J 11 2481 E 0 2159 L 8  
0249 B 4 7929 A 11 0248 F 0 3070 A 15 3522 L 7 3304 L 3 2151 J 11 2482 E 0 2160 L 8  
0250 B 4 7930 A 11 0249 F 0 3071 A 15 3523 L 7 3305 L 3 2152 J 11 2483 E 0 2161 L 8  
0251 B 4 7931 A 11 0250 F 0 3072 A 15 3524 L 7 3306 L 3 2153 J 11 2484 E 0 2162 L 8  
0252 B 4 7932 A 11 0251 F 0 3073 A 15 3525 L 7 3307 L 3 2154 J 11 2485 E 0 2163 L 8  
0253 B 4 7933 A 11 0252 F 0 3074 A 15 3526 L 7 3308 L 3 2155 J 11 2486 E 0 2164 L 8  
0254 B 4 7934 A 11 0253 F 0 3075 A 15 3527 L 7 3309 L 3 2156 J 11 2487 E 0 2165 L 8  
0255 B 4 7935 A 11 0254 F 0 3076 A 15 3528 L 7 3310 L 3 2157 J 11 2488 E 0 2166 L 8  
0256 B 4 7936 A 11 0255 F 0 3077 A 15 3529 L 7 3311 L 3 2158 J 11 2489 E 0 2167 L 8  
0257 B 4 7937 A 11 0256 F 0 3078 A 15 3530 L 7 3312 L 3 2159 J 11 2490 E 0 2168 L 8  
0258 B 4 7938 A 11 0257 F 0 3079 A 15 3531 L 7 3313 L 3 2160 J 11 2491 E 0 2169 L 8  
0259 B 4 7939 A 11 0258 F 0 3080 A 15 3532 L 7 3314 L 3 2161 J 11 2492 E 0 2170 L 8  
0260 B 4 7940 A 11 0259 F 0 3081 A 15 3533 L 7 3315 L 3 2162 J 11 2493 E 0 2171 L 8  
0261 B 4 7941 A 11 0260 F 0 3082 A 15 3534 L 7 3316 L 3 2163 J 11 2494 E 0 2172 L 8  
0262 B 4 7942 A 11 0261 F 0 3083 A 15 3535 L 7 3317 L 3 2164 J 11 2495 E 0 2173 L 8  
0263 B 4 7943 A 11 0262 F 0 3084 A 15 3536 L 7 3318 L 3 2165 J 11 2496 E 0 2174 L 8  
0264 B 4 7944 A 11 0263 F 0 3085 A 15 3537 L 7 3319 L 3 2166 J 11 2497 E 0 2175 L 8  
0265 B 4 7945 A 11 0264 F 0 3086 A 15 3538 L 7 3320 L 3 2167 J 11 2498 E 0 2176 L 8  
0266 B 4 7946 A 11 0265 F 0 3087 A 15 3539 L 7 3321 L 3 2168 J 11 2499 E 0 2177 L 8  
0267 B 4 7947 A 11 0266 F 0 3088 A 15 3540 L 7 3322 L 3 2169 J 11 2500 E 0 2178 L 8  
0268 B 4 7948 A 11 0267 F 0 3089 A 15 3541 L 7 3323 L 3 2170 J 11 2501 E 0 2179 L 8  
0269 B 4 7949 A 11 0268 F 0 3090 A 15 3542 L 7 3324 L 3 2171 J 11 2502 E 0 2180 L 8  
0270 B 4 7950 A 11 0269 F 0 3091 A 15 3543 L 7 3325 L 3 2172 J 11 2503 E 0 2181 L 8  
0271 B 4 7951 A 11 0270 F 0 3092 A 15 3544 L 7 3326 L 3 2173 J 11 2504 E 0 2182 L 8  
0272 B 4 7952 A 11 0271 F 0 3093 A 15 3545 L 7 3327 L 3 2174 J 11 2505 E 0 2183 L 8  
0273 B 4 7953 A 11 0272 F 0 3094 A 15 3546 L 7 3328 L 3 2175 J 11 2506 E 0 2184 L 8  
0274 B 4 7954 A 11 0273 F 0 3095 A 15 3547 L 7 3329 L 3 2176 J 11 2507 E 0 2185 L 8  
0275 B 4 7955 A 11 0274 F 0 3096 A 15 3548 L 7 3330 L 3 2177 J 11 2508 E 0 2186 L 8  
0276 B 4 7956 A 11 0275 F 0 3097 A 15 3549 L 7 3331 L 3 2178 J 11 2509 E 0 2187 L 8  
0277 B 4 7957 A 11 0276 F 0 3098 A 15 3550 L 7 3332 L 3 2179 J 11 2510 E 0 2188 L 8  
0278 B 4 7958 A 11 0277 F 0 3099 A 15 3551 L 7 3333 L 3 2180 J 11 2511 E 0 2189 L 8  
0279 B 4 7959 A 11 0278 F 0 3100 A 15 3552 L 7 3334 L 3 2181 J 11 2512 E 0 2190 L 8  
0280 B 4 7960 A 11 0279 F 0 3101 A 15 3553 L 7 3335 L 3 2182 J 11 2513 E 0 2191 L 8  
0281 B 4 7961 A 11 0280 F 0 3102 A 15 3554 L 7 3336 L 3 2183 J 11 2514 E 0 2192 L 8  
0282 B 4 7962 A 11 0281 F 0 3103 A 15 3555 L 7 3337 L 3 2184 J 11 2515 E 0 2193 L 8  
0283 B 4 7963 A 11 0282 F 0 3104 A 15 3556 L 7 3338 L 3 2185 J 11 2516 E 0 2194 L 8  
0284 B 4 7964 A 11 0283 F 0 3105 A 15 3557 L 7 3339 L 3 2186 J 11 2517 E 0 2195 L 8  
0285 B 4 7965 A 11 0284 F 0 3106 A 15 3558 L 7 3340 L 3 2187 J 11 2518 E 0 2196 L 8  
0286 B 4 7966 A 11 0285 F 0 3107 A 15 3559 L 7 3341 L 3 2188 J 11 2519 E 0 2197 L



# Main Panel C.B.A. (B1, B2, B3, C and D)



1156-4

**D**

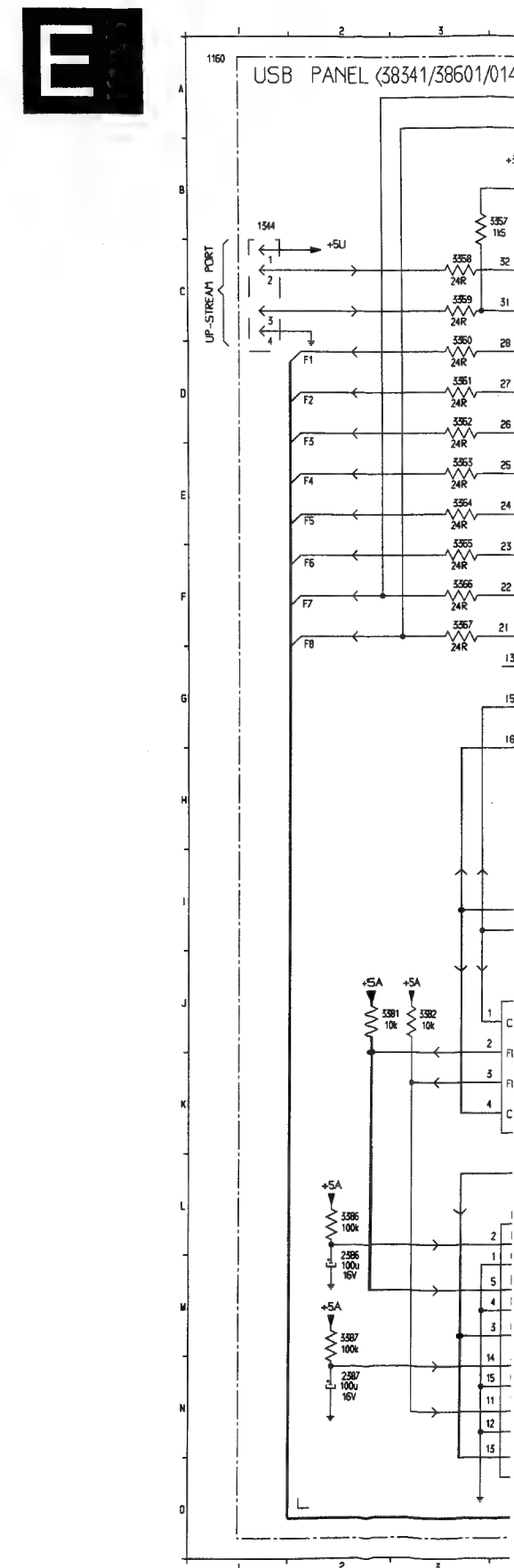
AUDIO (37741)

(s) : stands for SMD components

FROM PC

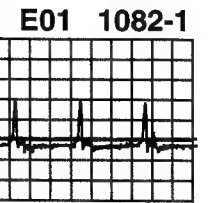
TO EARPHONE PCB

TO INTERNAL MIC



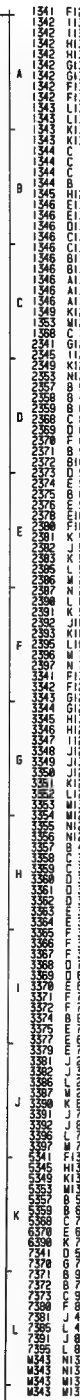


## 19A CM5800 25

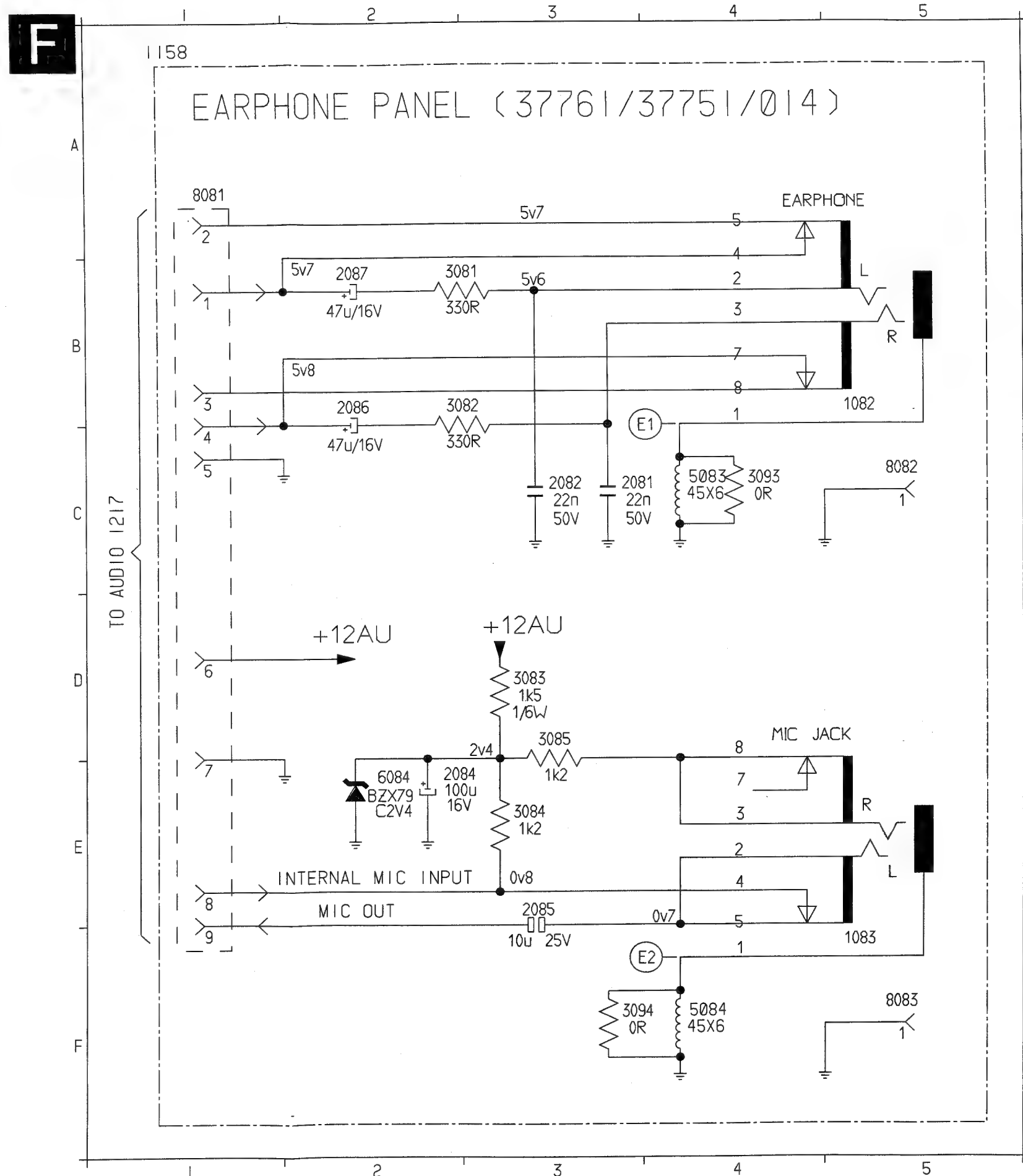


**E02 1083-1**

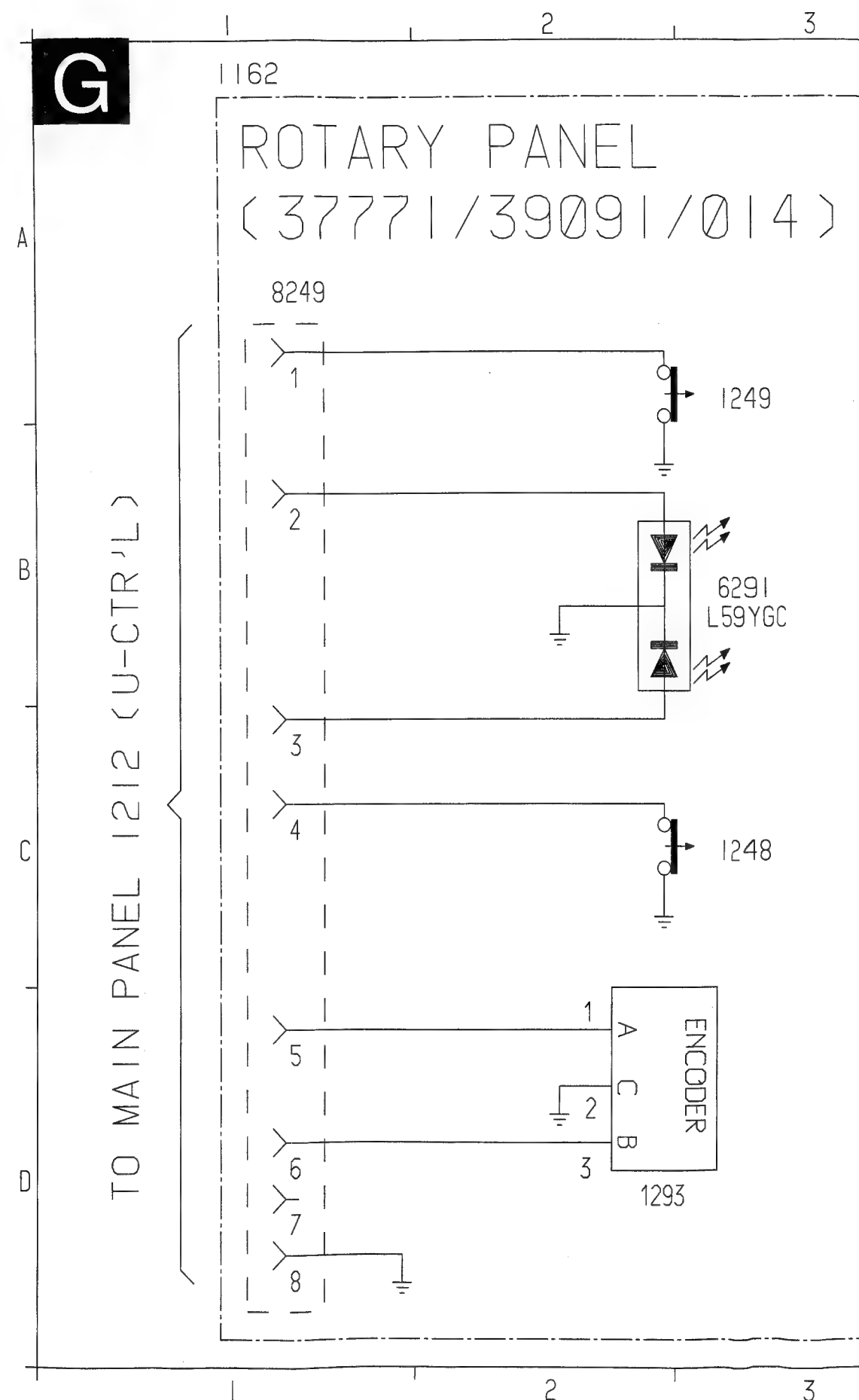
0.1 V/div AC  
10  $\mu$ S/div



# Earphone Schematic Diagram

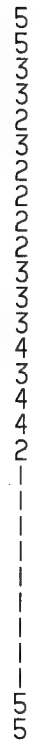


# Rotary Schematic Diagram

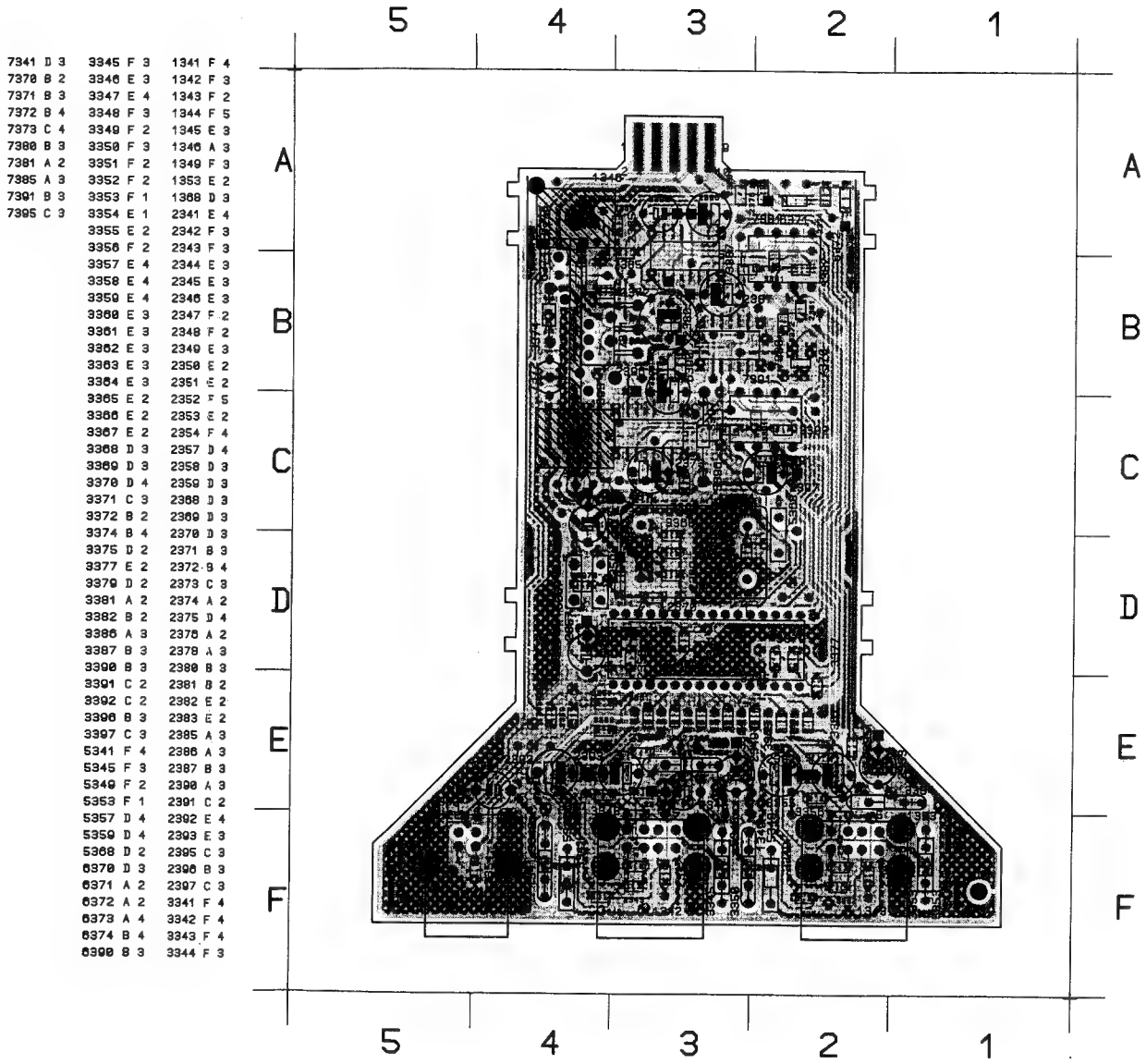


[illegible]

٥٦٧  
٤٢٣  
١٠٩  
٨٧٦  
٥٤٣  
٢١٠







**Warning**

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential.

**1. Servicing of SMDs (Surface Mounted Devices)****1.1 General cautions on handling and storage**

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

**1.2 Removal of SMDs**

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By using a solder wick and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 4.1A)

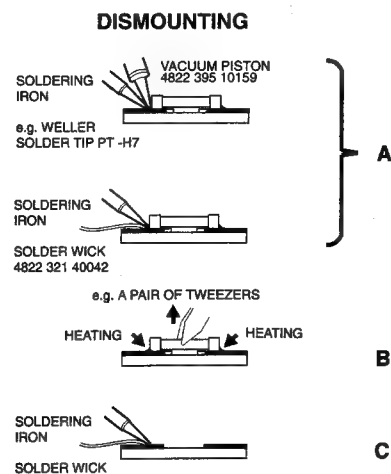


Fig. 4.1

- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 4.1 B).
- Remove the excess solder on the solder lands by means of a solder wick or a solder sucker (see Fig. 4.1C).

**1.3 Caution on removal**

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- The chip, once removed, must never be reused.

**1.4 Attachment of SMDs**

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig. 4.2A).
- Next complete the soldering of the terminals of the component (see Fig. 4.2B).

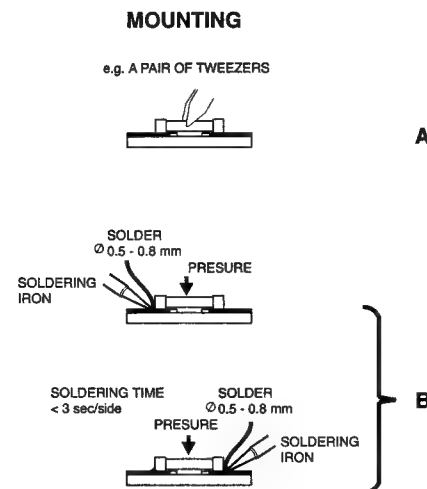


Fig. 4.2

**2. Caution when attaching SMDs**

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 4.3).

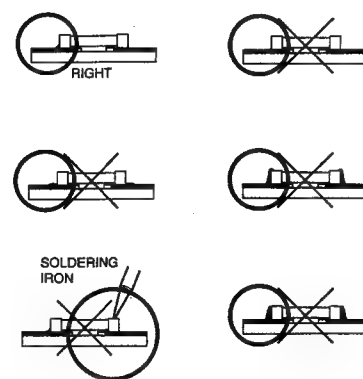
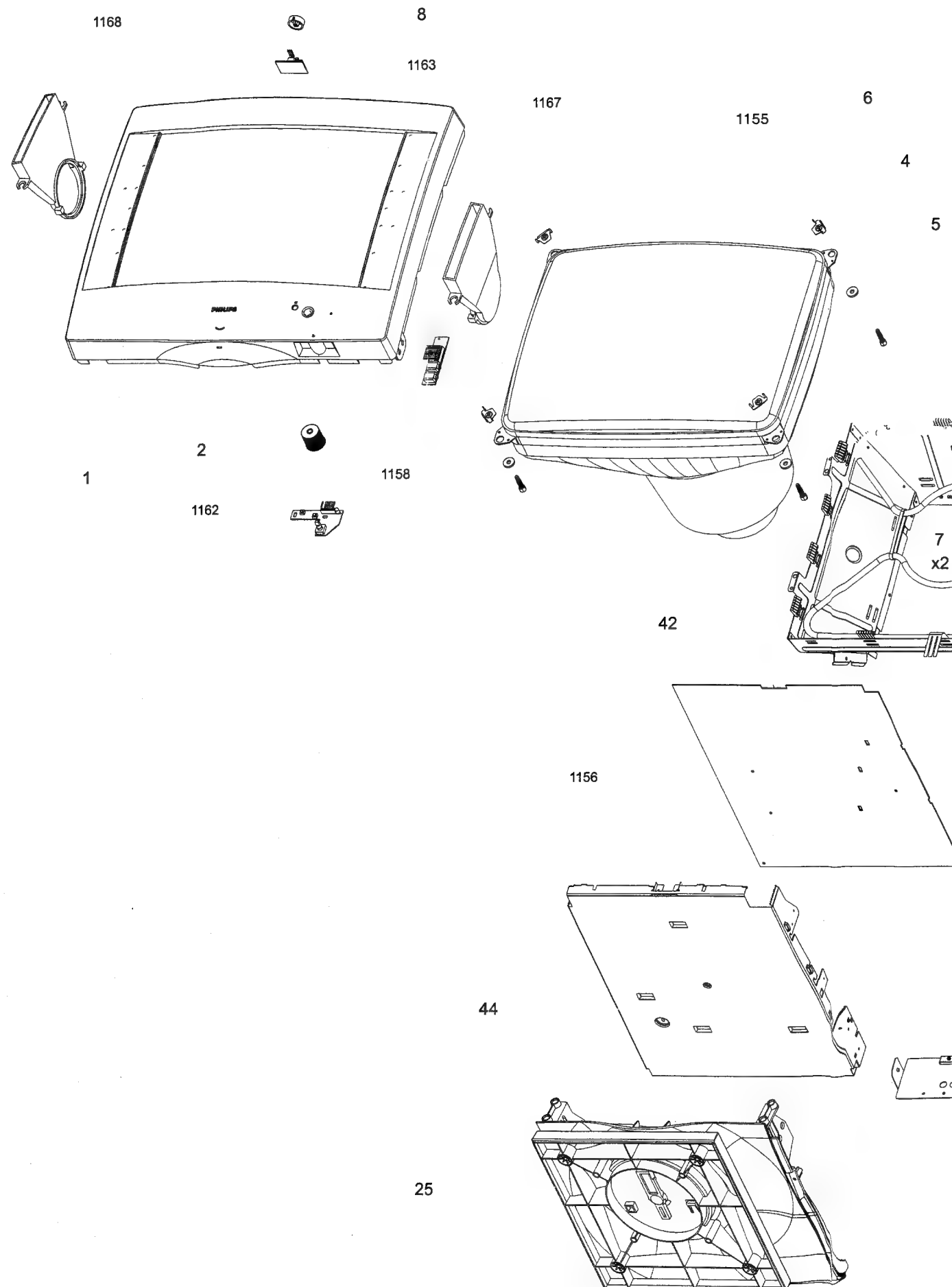
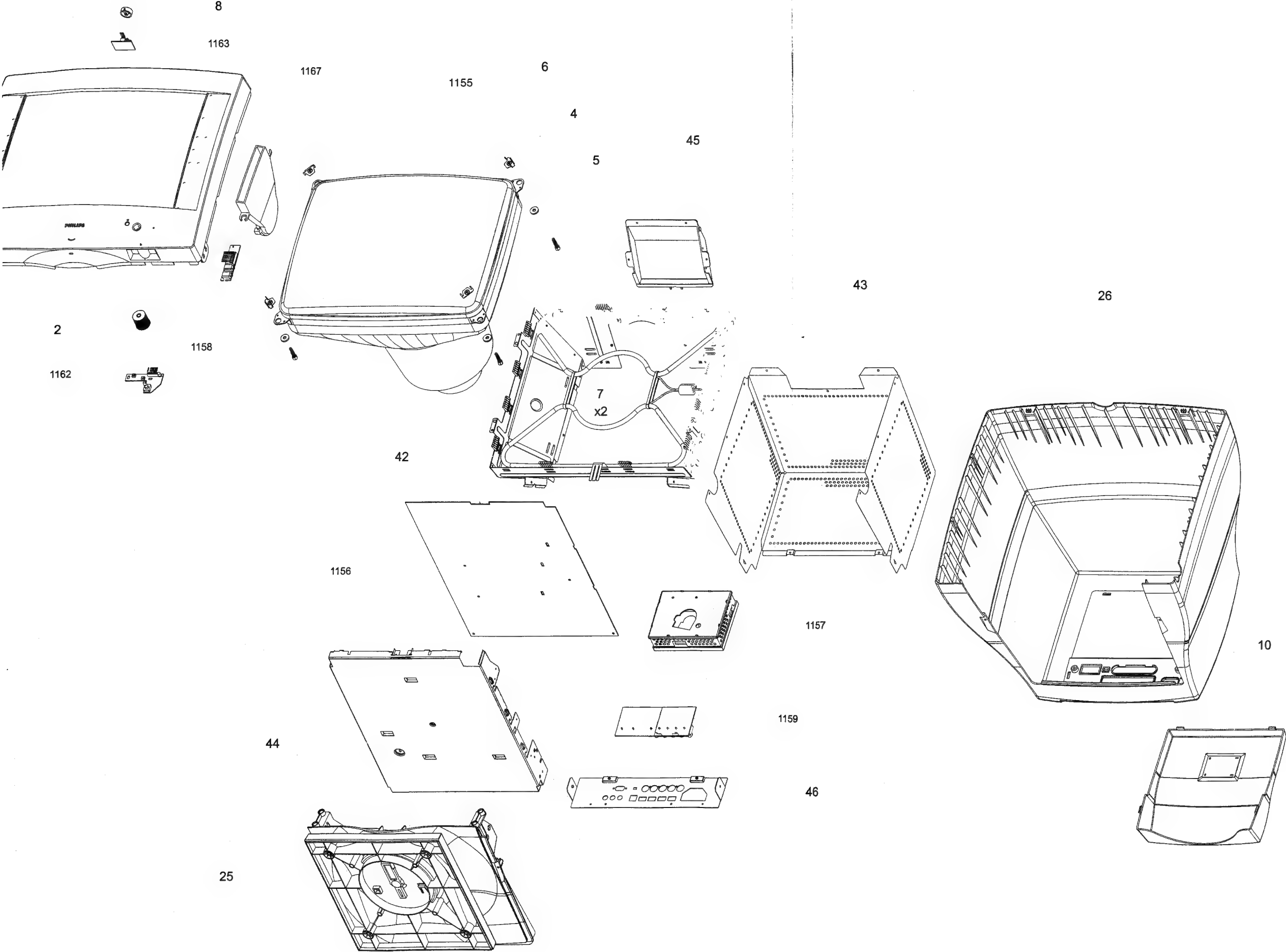
**EXAMPLES**

Fig. 4.3





Exploded View



# Spare parts list

19A580BQ/74C

29

## Parts indicated on exploded view: Model: 19A580BQ/74C

|       |                |                                     |
|-------|----------------|-------------------------------------|
| 1     | 3138 107 94230 | FRONT CABINET ASSY                  |
|       | 3138 104 39310 | LENS                                |
|       | 3138 104 39320 | FUNCTION KNOB                       |
|       | 4822 816 11141 | SPEAKER PANEL (R)                   |
| 2     | 3138 104 38260 | LOCKER                              |
| 3     | 3138 104 39300 | ROTARY KNOB                         |
| 4     | 3138 101 63950 | CRT MOUNTING WASHER                 |
| 5     | 3138 100 41180 | SCREW-CRT (TAP TITE SCREW W/WASHER) |
| 6     | 3138 101 64480 | PLATE-CRT                           |
| 8     | 3138 104 39380 | POWER KNOB                          |
| 10    | 3138 107 94440 | CABLE COVER ASSY                    |
|       | 3138 104 39330 | CABLE COVER                         |
|       | 3138 104 40990 | NAME PLATE                          |
| 25    | 3138 107 94240 | PEDESTAL ASSY                       |
|       | 3138 104 39280 | BOTTOM                              |
|       | 3138 104 38270 | SLIDER                              |
|       | 3138 104 39290 | BASE - PEDESTAL                     |
| 26    | 3138 104 39270 | BACK COVER                          |
| 1155A | 4822 131 11275 | CRT M46LLQ683X01 (S)                |
| 1156  | 3138 128 62000 | MAIN PCB ASSY                       |
| 1157  | 3138 128 62480 | VIDEO PCB ASSY                      |
| 1158  | 3138 128 59270 | EARPHONE PCB ASSY                   |
| 1162  | 3138 128 59310 | ENCODER PCB ASSY                    |
| 1163  | 3138 128 59320 | DC POWER SWITCH PCB ASSY            |
| 1167  | 3138 128 63030 | SPEAKER ASSY                        |
| 1168  | 3138 128 63030 | SPEAKER ASSY                        |

### Various

|       |                |                           |
|-------|----------------|---------------------------|
| 1166A | 3138 128 77960 | DEGAUSSING COIL ASSY      |
|       | 4822 701 20292 | TAPPING SCREW WITH WASHER |
|       | 3138 105 35110 | D.F.U                     |
|       | 3138 105 35200 | QUICK SET UP GUIDE        |
|       | 4822 600 10409 | P.E. BAG (for DFU)        |
|       | 3138 106 51130 | CARTON                    |
|       | 3138 106 51100 | CUSHION TOP-L             |
|       | 3138 106 51110 | CUSHION TOP-R             |
|       | 3138 106 51120 | CUSHION BOTTOM            |
|       | 4822 701 13753 | P.E. BAG (for SET)        |

### Accessories

|       |                |                                     |
|-------|----------------|-------------------------------------|
|       | 4822 320 12215 | AUDIO CABLE                         |
|       | 4822 320 12216 | MICROPHONE CABLE                    |
|       | 4822 265 11089 | VGA ADAPTOR HD15/DB15 (MAC ADAPTOR) |
|       | 3138 117 01000 | CD-ROM COLORIFIC                    |
| 1151A | 4822 321 11283 | MAINS CORD                          |
| 1152  | 4822 320 12217 | VF CABLE                            |

## 1156 Main panel

### Various

|       |                |                           |
|-------|----------------|---------------------------|
| 1156  | 3138 128 62000 | MAIN PCB ASSY 3774        |
|       | 4822 492 71337 | SPRING (FUSE HOLDER)      |
|       | 4822 701 20292 | TAPPING SCREW WITH WASHER |
|       | 5322 390 20011 | VET SILIC.P4 20GR         |
| 1101A | 4822 070 34002 | FUSE, 218004.(4A)         |

|       |                |                               |
|-------|----------------|-------------------------------|
| 1102A | 4822 280 70378 | RELAY 2P 12V/60MA OMI-SS212 B |
| 1109  | 3138 128 78430 | AC INLET ASSY 2 P.            |
| 1114  | 4822 265 30891 | 12.000 000 MHz                |
| 1202  | 4822 242 10836 | 2P MALE                       |
| 1203  | 4822 267 10703 | 14P MALE (62511B)             |
| 1211  | 4822 267 10696 | 7P WAFER (63576)              |
| 1212  | 4822 267 10697 | 3P MALE (61143B)              |
| 1213  | 4822 267 10698 | 8P FEMALE                     |
| 1215  | 4822 267 10704 | 9P WAFER (63578)              |
| 1217  | 4822 267 10699 | CONNECTOR 2P MALE             |
| 1218  | 4822 265 11118 | R.C.A. JACK                   |
| 1221  | 4822 265 11175 | TRANSISTORS                   |
|       | 4822 492 62076 | INSULATION PLATE              |
|       | 4822 466 93161 | INSULATING PLATE              |
|       | 4822 466 92891 | VET SILIC.P4 20GR             |
|       | 5322 390 20011 |                               |

|      |                |                        |
|------|----------------|------------------------|
| 1263 | 3138 128 63080 | EEPROM ASSEMBLY (7201) |
| 1504 | 4822 265 31231 | 3 P MALE               |

### -II-

|       |                |                          |
|-------|----------------|--------------------------|
| 2104  | 4822 121 70446 | 220nF 20% 250V           |
| 2105  | 4822 126 14088 | 2.2nF 20% 250V           |
| 2106  | 4822 126 14088 | 2.2nF 20% 250V           |
| 2107  | 5322 121 44212 | 1μF 20% 275B             |
| 2111  | 4822 121 43641 | 470nF 5% 400V            |
| 2112  | 4822 121 43699 | 220nF 100V               |
| 2113  | 4822 121 43699 | 220nF 100V               |
| 2114  | 4822 121 43696 | 100nF 100V               |
| 2115  | 4822 121 43696 | 100nF 100V               |
| 2116  | 5322 122 32531 | 100pF 5% 50V             |
| 2117  | 4822 126 10453 | 50V                      |
| 2118  | 4822 122 30057 | 2.7nF 10% 100V           |
| 2119  | 4822 124 22669 | 1μF 20% 50V              |
| 2120  | 4822 124 22669 | 1μF 20% 50V              |
| 2121  | 4822 121 43696 | 100nF 100V               |
| 2122  | 4822 126 13469 | 330pF 10% Y5B 2KV        |
| 2123  | 4822 124 11517 | 450V 100U 20%            |
| 2124  | 4822 121 43696 | 100nF 100V               |
| 2125  | 4822 121 70357 | 22nF 10% 630V            |
| 2126  | 4822 121 70386 | 47nF 10% 250V            |
| 2127  | 4822 124 81186 | 47U 20% 20%              |
| 2128  | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2129  | 4822 124 12112 | 1000μF 20% 10V           |
| 2130  | 4822 124 40849 | 330μF 20% 16V            |
| 2132  | 4822 124 12112 | 1000μF 20% 10V           |
| 2134  | 4822 124 12113 | 3300μF 20% 10V           |
| 2138A | 4822 126 14088 | 2.2nF 20% 250V           |
| 2141  | 4822 124 22669 | 1μF 20% 50V              |
| 2142  | 4822 126 13606 | 10N 2% 100V              |
| 2143  | 4822 124 40239 | 0.47μF 20% 63V           |
| 2146  | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2147  | 5322 122 32331 | 1nF 10% 100V             |
| 2148  | 4822 121 43696 | 100nF 100V               |
| 2149  | 4822 121 43913 | 470nF 10% 100V           |
| 2150  | 5322 122 32311 | 470pF 10% 100V           |
| 2151  | 5322 122 32311 | 470pF 10% 100V           |
| 2154  | 4822 124 42145 | 100μF 20% 25V            |
| 2157  | 4822 121 43908 | 47nF 10% 250V            |
| 2159  | 4822 121 43699 | 220nF 100V               |
| 2160  | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2161  | 4822 122 33342 | 33nF 10% 63V             |
| 2163  | 4822 121 43908 | 47nF 10% 250V            |
| 2164  | 4822 121 43364 | 10nF 10% 400V            |
| 2165  | 4822 121 43699 | 220nF 100V               |
| 2166  | 4822 121 43696 | 100nF 100V               |
| 2167  | 4822 124 42359 | 47μF 100V                |
| 2168  | 4822 124 42149 | 220μF 20% 25V            |
| 2169  | 4822 124 42145 | 100μF 20% 25V            |
| 2170  | 4822 126 11103 | 10nF 5% 50V              |
| 2171  | 4822 121 43696 | 100nF 100V               |
| 2172A | 4822 126 14088 | 2.2nF 20% 250V           |
| 2173  | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2181  | 4822 124 11941 | 100μF 20% 250V           |
| 2182  | 4822 124 11941 | 100μF 20% 250V           |
| 2185  | 4822 124 12034 | 220μF 20% 100V           |
| 2186  | 4822 122 32899 | 100pF 10%B 500V          |
| 2187  | 4822 124 11942 | 2200μF 20% 25V           |
| 2188  | 4822 122 32899 | 100pF 10%B 500V          |

|      |                |                          |
|------|----------------|--------------------------|
| 2189 | 4822 124 11943 | 1000μF 20% 25V           |
| 2190 | 4822 122 32899 | 100pF 10%B 500V          |
| 2191 | 4822 124 81285 | 2200μF 20% 16V           |
| 2192 | 4822 124 11942 | 2200μF 20% 25V           |
| 2193 | 4822 124 81131 | 330μF 20% 16V            |
| 2194 | 4822 124 42199 | 22μF 20% 50V             |
| 2195 | 4822 124 40207 | 100μF 20% 25V            |
| 2196 | 4822 124 22669 | 1μF 20% 50V              |
| 2197 | 5322 122 31866 | 6.8nF 10% 63V            |
| 2198 | 5322 122 32336 | 560pF 10% 100V           |
| 2201 | 4822 121 43696 | 100nF 100V               |
| 2202 | 5322 122 32143 | 22pF 100V                |
| 2203 | 5322 122 32143 | 22pF 100V                |
| 2214 | 4822 124 23539 | 10μF 20% 50V             |
| 2218 | 5322 124 41817 | 220μF 16V                |
| 2219 | 5322 122 32659 | 33pF 5% 50V              |
| 2220 | 5322 122 32659 | 33pF 5% 50V              |
| 2221 | 4822 124 22681 | 47μF 20% 16V             |
| 2222 | 4822 122 33575 | 220pF 5% 50V             |
| 2223 | 4822 124 23539 | 10μF 20% 50V             |
| 2234 | 5322 122 32658 | 22pF 5% 50V              |
| 2236 | 5322 122 32658 | 22pF 5% 50V              |
| 2239 | 4822 124 22681 | 47μF 20% 16V             |
| 2244 | 4822 124 22686 | 10μF 16V                 |
| 2245 | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2252 | 4822 122 33177 | 10nF 20% 50V             |
| 2253 | 4822 121 43699 | 220nF 100V               |
| 2254 | 4822 122 33177 | 10nF 20% 50V             |
| 2277 | 4822 124 23441 | 10μF 20% 50V             |
| 2281 | 5322 126 10184 | 680P 5% 50V.             |
| 2282 | 5322 126 10184 | 680P 5% 50V.             |
| 2283 | 4822 121 43913 | 470nF 10% 100V           |
| 2284 | 4822 121 43913 | 470nF 10% 100V           |
| 2285 | 4822 124 22678 | 100μF 20% 16V            |
| 2286 | 4822 124 22686 | 10μF 16V                 |
| 2287 | 4822 122 33342 | 33nF 10% 63V             |
| 2288 | 4822 122 33342 | 33nF 10% 63V             |
| 2289 | 4822 122 32646 | 5.6nF 10% 50V            |
| 2290 | 4822 122 32646 | 5.6nF 10% 50V            |
| 2291 | 4822 124 12072 | 2.2μF 20% 50V            |
| 2292 | 4822 124 40763 | 2.2μF 100 V              |
| 2293 | 5322 122 32052 | 680pF 10% 100V           |
| 2294 | 5322 122 32052 | 680pF 10% 100V           |
| 2295 | 4822 121 43696 | 100nF 100V               |
| 2296 | 4822 121 43696 | 100nF 100V               |
| 2297 | 4822 124 42172 | 1000μF 16V               |
| 2305 | 4822 124 22681 | 47μF 20% 16V             |
| 2310 | 5322 122 32452 | 47pF 5% 63V              |
| 2311 | 5322 122 32452 | 47pF 5% 63V              |
| 2316 | 4822 126 13561 | 220nF 10% 16V            |
| 2317 | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2325 | 4822 124 80132 | 47μF 20% 25V             |
| 2326 | 4822 124 42136 | 10μF 25V                 |
| 2331 | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2332 | 5322 122 32531 | 100pF 5% 50V             |
| 2333 | 5322 122 32531 | 100pF 5% 50V             |
| 2401 | 4822 124 22678 | 100μF 20% 16V            |
| 2403 | 4822 121 10705 | 47nF 5% 100V             |
| 2404 | 4822 121 10705 | 47nF 5% 100V             |
| 2405 | 4822 121 43513 | 100nF 100V               |
| 2406 | 4822 124 23539 | 10μF 20% 50V             |
| 2407 | 4822 121 43696 | 100nF 100V               |
| 2408 | 5322 122 32531 | 100pF 5% 50V             |
| 2409 | 4822 121 43695 | 47nF 10% 100V            |
| 2410 | 4822 121 70439 | 2.2nF 5% 100V            |
| 2411 | 4822 126 13606 | 10N 2% 100V              |
| 2412 | 4822 126 12104 | 12nF 5% 63V              |
| 2416 | 5322 122 32654 | 22nF 10% 63V             |
| 2425 | 4822 124 23539 | 10μF 20% 50V             |
| 2430 | 5322 122 32531 | 100pF 5% 50V             |
| 2431 | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2432 | 4822 124 22669 | 1μF 20% 50V              |
| 2433 | 4822 124 40242 | 1μF 20% 63V              |
| 2434 | 4822 124 23539 | 10μF 20% 50V             |
| 2437 | 4822 122 33177 | 10nF 20% 50V             |
| 2438 | 4822 124 22669 | 1μF 20% 50V              |
| 2439 | 4822 124 40242 | 1μF 20% 63V              |
| 2440 | 4822 124 40246 | 4.7μF 20% 63V            |
| 2443 | 4822 124 23539 | 10μF 20% 50V             |
| 2444 | 4822 124 40242 | 1μF 20% 63V              |
| 2450 | 4822 124 40246 | 4.7μF 20% 63V            |
| 2453 | 4822 124 23441 | 10μF 20% 50V             |
| 2456 | 4822 124 23539 | 10μF 20% 50V             |
| 2457 | 4822 124 23539 | 10μF 20% 50V             |
| 2460 | 4822 124 23539 | 10μF 20% 50V             |
| 2467 | 4822 124 80132 | 47μF 20% 25V             |
| 2468 | 4822 122 33177 | 10nF 20% 50V             |
| 2472 | 4822 126 13196 | CER2 SMD 25V 100N PM10 R |
| 2473 | 4822 121 43916 | 330nF 10% 250V           |
| 2474 | 4822 124 22681 | 47μF 20% 16V             |

|      |                |                  |
|------|----------------|------------------|
| 2477 | 4822 124 23539 | 10μF 20% 50V     |
| 2480 | 4822 124 80132 | 47μF 20% 25V     |
| 2486 | 5322 122 32448 | 10pF 5% 50V      |
| 2487 | 5322 122 32452 | 47pF 5% 63V      |
| 2488 | 5322 126 10184 | 680P 5% 50V.     |
| 2489 | 5322 126 10184 | 680P 5% 50V.     |
| 2490 | 4822 124 40207 | 100μF 20% 25V    |
| 2491 | 4822 124 23539 | 10μF 20% 50V     |
| 2492 | 5322 122 32654 | 22nF 10% 63V     |
| 2493 | 4822 124 80132 | 47μF 20% 25V     |
| 2501 | 4822 124 42144 | 470μF 63V        |
| 2502 | 4822 124 22336 | 100μF 20% 40V    |
| 2503 | 4822 126 14106 | 220pF 5% 50V     |
| 2504 | 4822 121 10706 | 22nF 5% 100V     |
| 2509 | 4822 121 43513 | 100nF 100V       |
| 2510 | 4822 124 42144 | 470μF 63V        |
| 2511 | 5322 116 80853 | 560pF 5% 63V     |
| 2513 | 5322 116 80853 | 560pF 5% 63V     |
| 2519 | 4822 124 23539 | 10μF 20% 50V     |
| 2521 | 4822 124 22681 | 47μF 20% 16V     |
| 2526 | 4822 121 70444 | 47nF 250V        |
| 2527 | 4822 124 22675 | 1μF 20% 160V     |
| 2529 | 4822 126 13035 | 220pF 10% 2KV    |
| 2530 | 4822 126 13035 | 220pF 10% 2KV    |
| 2531 | 4822 121 43364 | 10nF 10% 400V    |
| 2532 | 4822 121 70147 | 3.9nF 5% 1.6KV</ |

|      |                |                |      |                |              |      |                |                  |      |                |                 |
|------|----------------|----------------|------|----------------|--------------|------|----------------|------------------|------|----------------|-----------------|
| 2683 | 4822 121 70598 | 82nF 5% 400V   | 3196 | 4822 051 20682 | 6k8 5% 0.1W  | 3323 | 4822 051 20471 | 470Ω 5% 0.1W     | 3490 | 4822 051 20471 | 470Ω 5% 0.1W    |
| 2901 | 4822 121 40336 | 47nF 10% 250V  | 3197 | 4822 116 80678 | 10k 1%       | 3324 | 4822 117 11503 | 220Ω 1% 0.1W     | 3491 | 4822 050 24709 | 47Ω 1% 0.6W     |
|      |                |                | 3201 | 4822 050 21003 | 10k 1% 0.6W  | 3325 | 4822 050 24708 | 407 1% 0.6W      | 3492 | 4822 111 50521 | 100k 5%         |
|      |                |                | 3202 | 4822 050 21003 | 10k 1% 0.6W  | 3326 | 4822 051 20393 | 39k 5% 0.1W      | 3493 | 4822 051 20224 | 220k 5% 0.1W    |
|      |                |                | 3203 | 4822 050 23302 | 3k3 1% 0.6W  | 3327 | 5322 100 11544 | 220k 30%lin 0.1W | 3495 | 4822 117 11383 | 12k 1% 0.1W     |
|      |                |                |      |                |              | 3328 | 4822 117 10833 | 10k 1% 0.1W      |      |                |                 |
| 3080 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3204 | 4822 051 20332 | 3k3 5% 0.1W  | 3329 | 4822 117 10833 | 10k 1% 0.1W      | 3496 | 4822 117 10833 | 10k 1% 0.1W     |
| 3081 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3205 | 4822 117 10833 | 10k 1% 0.1W  | 3330 | 4822 051 20393 | 39k 5% 0.1W      | 3497 | 4822 050 26803 | 68k 1% 0.6W     |
| 3082 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3206 | 4822 050 21001 | 100Ω 1% 0.6W | 3332 | 4822 117 10834 | 47k 1% 0.1W      | 3498 | 4822 051 20102 | 1k 5% 0.1W      |
| 3083 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3207 | 4822 050 21001 | 100Ω 1% 0.6W | 3333 | 4822 117 10834 | 47k 1% 0.1W      | 3499 | 4822 051 20008 | 0Ω JUMP. (SMD)  |
| 3084 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3212 | 4822 050 24702 | 4k7 1% 0.6W  |      |                |                  | 3501 | 4822 052 11228 | 202 5% 0.5W     |
| 3085 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3213 | 4822 050 21001 | 100Ω 1% 0.6W | 3334 | 4822 051 20101 | 100Ω 5% 0.1W     | 3502 | 4822 050 22202 | 2k2 1% 0.6W     |
| 3086 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3214 | 4822 051 20102 | 1k 5% 0.1W   | 3335 | 4822 051 20101 | 100Ω 5% 0.1W     | 3503 | 4822 050 24701 | 470Ω 1% 0.6W    |
| 3087 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3215 | 4822 117 11449 | 2k2 1% 0.1W  | 3336 | 4822 051 20101 | 100Ω 5% 0.1W     | 3504 | 4822 050 24701 | 470Ω 1% 0.6W    |
| 3088 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3216 | 4822 051 20472 | 4k7 5% 0.1W  | 3401 | 4822 050 24701 | 470Ω 1% 0.6W     | 3505 | 4822 050 22202 | 2k2 1% 0.6W     |
| 3089 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3220 | 4822 117 10834 | 47k 1% 0.1W  | 3402 | 4822 051 20472 | 4k7 5% 0.1W      | 3506 | 4822 050 21808 | 102k 1% 0.6W    |
|      |                |                |      |                |              | 3403 | 4822 050 24702 | 4k7 1% 0.6W      |      |                |                 |
| 3090 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3221 | 4822 050 22201 | 220Ω 1% 0.6W | 3404 | 4822 051 20472 | 4k7 5% 0.1W      | 3507 | 4822 050 21808 | 102k 1% 0.6W    |
| 3092 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3222 | 4822 050 22201 | 220Ω 1% 0.6W | 3405 | 4822 117 11449 | 2k2 1% 0.1W      | 3508 | 4822 050 24701 | 470Ω 1% 0.6W    |
| 3093 | 4822 051 20008 | 0Ω JUMP. (SMD) | 3223 | 4822 050 21003 | 10k 1% 0.6W  | 3406 | 4822 050 23301 | 330Ω 1% 0.6W     | 3509 | 4822 050 23309 | 33Ω 1% 0.6W     |
| 3101 | 4822 053 21514 | 510k 5% 0.5W   | 3224 | 4822 050 21003 | 10k 1% 0.6W  | 3407 | 4822 051 53904 | 390k 1% 0.125W   | 3510 | 4822 052 11228 | 202 5% 0.5W     |
| 3102 | 4822 116 30469 | 5Ω 15%         | 3225 | 4822 050 21003 | 10k 1% 0.6W  |      |                |                  | 3511 | 4822 051 20223 | 22k 5% 0.1W     |
| 3106 | 4822 050 21205 | 1M 2 1% 0.6W   | 3226 | 4822 050 21003 | 10k 1% 0.6W  | 3408 | 4822 050 24701 | 470Ω 1% 0.6W     | 3512 | 4822 051 20332 | 3k3 5% 0.1W     |
| 3107 | 4822 050 23604 | 360k 1% 0.6W   | 3227 | 4822 050 21003 | 10k 1% 0.6W  | 3409 | 4822 050 21203 | 12k 1% 0.6W      | 3513 | 4822 050 13302 | 3k3 1% 0.4W     |
| 3108 | 4822 116 52271 | 33k 5% 0.5W    | 3228 | 4822 050 24702 | 4k7 1% 0.6W  | 3410 | 4822 050 21242 | 1k24 1% 0.6W     | 3517 | 4822 051 20472 | 4k7 5% 0.1W     |
| 3109 | 4822 051 53904 | 390k 1% 0.125W | 3229 | 4822 051 20102 | 1k 5% 0.1W   | 3411 | 4822 050 27501 | 750Ω 1% 0.6W     | 3518 | 4822 050 22203 | 22k 5% 0.1W     |
| 3110 | 4822 051 53904 | 390k 1% 0.125W | 3230 | 4822 050 21001 | 100Ω 1% 0.6W | 3412 | 4822 050 28202 | 8k2 1% 0.6W      | 3519 | 4822 050 22203 | 22k 5% 0.1W     |
|      |                |                |      |                |              | 3414 | 4822 050 12203 | 22k 1% 0.4W      |      |                |                 |
| 3111 | 4822 050 13304 | 330k 1% 0.4W   | 3231 | 4822 050 21001 | 100Ω 1% 0.6W | 3415 | 4822 117 11449 | 2k2 1% 0.1W      | 3520 | 4822 052 10478 | 407 5% 0.33W    |
| 3112 | 4822 051 20105 | 1M 5% 0.1W     | 3232 | 4822 117 11449 | 2k2 1% 0.1W  | 3416 | 4822 117 11383 | 12k 1% 0.1W      | 3521 | 4822 117 11449 | 2k2 1% 0.1W     |
| 3113 | 4822 050 24708 | 407 1% 0.6W    | 3233 | 4822 050 21002 | 1k 1% 0.6W   | 3417 | 4822 111 50522 | 33k 5% 1/6W      | 3522 | 4822 050 24701 | 470Ω 1% 0.6W    |
| 3114 | 4822 050 23902 | 3k9 1% 0.6W    | 3234 | 4822 051 20332 | 3k3 5% 0.1W  | 3423 | 4822 117 11449 | 2k2 1% 0.1W      | 3523 | 4822 117 10833 | 10k 1% 0.1W     |
| 3115 | 4822 116 52207 | 1k2 5% 0.5W    | 3235 | 4822 051 20101 | 100Ω 5% 0.1W |      |                |                  | 3524 | 4822 050 24701 | 470Ω 1% 0.6W    |
| 3116 | 4822 117 12179 | 0Ω 5% 1W       | 3236 | 4822 051 20332 | 3k3 5% 0.1W  | 3424 | 4822 052 10478 | 407 5% 0.33W     | 3526 | 4822 050 21803 | 18k 1% 0.6W     |
| 3117 | 4822 050 24703 | 47k 1% 0.6W    | 3237 | 4822 050 21001 | 100Ω 1% 0.6W | 3425 | 4822 050 21203 | 12k 1% 0.6W      | 3527 | 4822 052 11101 | 100Ω 5% 0.5W    |
| 3118 | 4822 050 28202 | 8k2 1% 0.6W    | 3238 | 4822 051 20472 | 4k7 5% 0.1W  | 3426 | 4822 050 12703 | 27k 1% 0.4W      | 3528 | 4822 117 12669 | 1k 5% 7W        |
| 3119 | 4822 050 12702 | 2k7 1% 0.4W    | 3239 | 4822 052 10478 | 407 5% 0.33W | 3427 | 4822 050 23902 | 3k9 1% 0.6W      | 3531 | 4822 053 12108 | 1Ω 5% 3W        |
| 3120 | 4822 050 22003 | 20k 1% 0.6W    | 3240 | 4822 050 21001 | 100Ω 1% 0.6W | 3428 | 4822 117 12602 | 750k 5% 0.1W     | 3532 | 4822 050 26809 | 68Ω 1% 0.6W     |
|      |                |                |      |                |              | 3429 | 4822 117 10833 | 10k 1% 0.1W      |      |                |                 |
| 3121 | 4822 052 11279 | 27Ω 5% 0.5W    | 3241 | 4822 050 21001 | 100Ω 1% 0.6W | 3430 | 4822 117 11449 | 2k2 1% 0.1W      | 3533 | 4822 050 21501 | 150Ω 1% 0.6W    |
| 3122 | 4822 050 22203 | 22k 1% 0.6W    | 3242 | 4822 050 21001 | 100Ω 1% 0.6W | 3431 | 4822 051 20104 | 100k 5% 0.1W     | 3540 | 4822 052 10828 | 802 5% 0.33W    |
| 3124 | 4822 117 12669 | 1k 5% 7W       | 3243 | 4822 050 21001 | 100Ω 1% 0.6W | 3432 | 4822 051 20563 | 56k 5% 0.1W      | 3541 | 4822 050 24709 | 47Ω 1% 0.6W     |
| 3125 | 4822 052 10133 | 13k 5% 0.33W   | 3244 | 4822 051 20822 | 8k2 5% 0.1W  | 3433 | 4822 051 20563 | 56k 5% 0.1W      | 3542 | 4822 050 21003 | 10k 1% 0.6W     |
| 3126 | 4822 050 12203 | 22k 1% 0.4W    | 3245 | 4822 050 22203 | 22k 1% 0.6W  |      |                |                  | 3543 | 4822 050 21202 | 1k2 1% 0.6W     |
| 3127 | 4822 050 24704 | 470k 1% 0.6W   | 3246 | 4822 051 20683 | 68k 5% 0.1W  | 3434 | 4822 116 82046 | 2k2 5% 1/6W      | 3544 | 4822 052 11108 | 1Ω 5% 0.5W      |
| 3128 | 4822 050 24704 | 470k 1% 0.6W   | 3247 | 4822 050 21001 | 100Ω 1% 0.6W | 3435 | 4822 051 20561 | 560Ω 5% 0.1W     | 3545 | 4822 117 10442 | 10Ω 5%          |
| 3129 | 4822 050 29104 | 910k 1% 0.6W   | 3248 | 4822 051 20472 | 4k7 5% 0.1W  | 3436 | 4822 051 20563 | 56k 5% 0.1W      | 3546 | 4822 117 12941 | 33Ω 5% 7W       |
| 3130 | 4822 050 29104 | 910k 1% 0.6W   | 3249 | 4822 051 20472 | 4k7 5% 0.1W  | 3437 | 4822 117 11449 | 2k2 1% 0.1W      | 3548 | 4822 052 10108 | 1Ω 5% 0.33W     |
| 3136 | 4822 050 21004 | 100k 1% 0.6W   | 3250 | 4822 050 21003 | 10k 1% 0.6W  | 3438 | 4822 050 13903 | 39k 1% 0.4W      | 3549 | 4822 052 10108 | 1Ω 5% 0.33W     |
|      |                |                |      |                |              | 3439 | 4822 050 23903 | 39k 1% 0.6W      |      |                |                 |
| 3137 | 4822 050 24708 | 407 1% 0.6W    | 3251 | 4822 050 24702 | 4k7 1% 0.6W  | 3440 | 4822 050 25603 | 56k 1% 0.6W      | 3550 | 4822 050 22201 | 220Ω 1% 0.6W    |
|      |                |                | 3252 | 4822 050 21001 | 100Ω 1% 0.6W | 3441 | 4822 117 10833 | 10k 1% 0.1W      | 3551 | 4822 100 11141 | 10k 30%lin 0.1W |
|      |                |                | 3253 | 4822 050 24702 | 4k7 1% 0.6W  | 3442 | 4822 050 13903 | 39k 1% 0.4W      | 3552 | 4822 050 26801 | 680Ω 1% 0.6W    |
|      |                |                | 3254 | 4822 050 21001 | 100Ω 1% 0.6W | 3443 | 4822 050 21204 | 120k 1% 0.6W     | 3554 | 4822 117 12942 | 150Ω 5% 7W      |
|      |                |                | 3255 | 4822 050 11503 | 15k 1% 0.4W  |      |                |                  | 3555 | 4822 051 20562 | 56k 5% 0.1W     |
| 3139 | 4822 050 11002 | 1k 1% 0.4W     | 3256 | 4822 050 24702 | 4k7 1% 0.6W  | 3444 | 4822 117 10965 | 18k 1% 0.1W      | 3556 | 4822 117 10442 | 10Ω 5%          |
| 3140 | 4822 050 23301 | 330Ω 1% 0.6W   | 3257 | 4822 051 20271 | 270Ω 5% 0.1W | 3445 | 4822 117 10833 | 10k 1% 0.1W      | 3557 | 4822 117 10753 | 12Ω 5% 0.5W     |
| 3141 | 4822 050 21501 | 150Ω 1% 0.6W   | 3258 | 4822 051 20121 | 120Ω 5% 0.1W | 3446 | 4822 117 10833 | 10k 1% 0.1W      | 3558 | 4822 052 11279 | 27Ω 5% 0.5W     |
| 3142 | 4822 050 11002 | 1k 1% 0.4W     | 3259 | 4822 051 20332 | 3k3 5% 0.1W  | 3447 | 4822 050 22202 | 2k2 1% 0.6W      | 3559 | 4822 050 24701 | 470Ω 1% 0.6W    |
| 3143 | 4822 050 23901 | 390Ω 1% 0.6W   | 3260 | 4822 050 22203 | 22k 1% 0.6W  | 3448 | 4822 051 20302 | 3k 5% 0.1W       | 3560 | 4822 052 11279 | 27Ω 5% 0.5W     |
| 3144 | 4822 116 52289 | 5k6 5% 0.5W    |      |                |              | 3449 | 4822 117 10833 | 10k 1% 0.1W      |      |                |                 |
| 3145 | 4822 050 15601 | 560Ω 1% 0.4W   | 3261 | 4822 050 21001 | 100Ω 1% 0.6W | 3450 | 4822 050 21002 | 1k 1% 0.6W       | 3562 | 4822 050 21203 | 12k 1% 0.6W     |
| 3146 | 4822 050 21003 | 10k 1% 0.6W    | 3262 | 4822 050 21001 | 100Ω 1% 0.6W | 3451 | 4822 051 20393 | 39k 5% 0.1W      | 3563 | 4822 117 11383 | 12k 1% 0.1W     |
| 3147 | 4822 050 24702 | 4k7 1% 0.6W    | 3263 | 4822 050 21001 | 100Ω 1% 0.6W | 3452 | 4822 117 10833 | 10k 1% 0.1W      | 3564 | 4822 051 20102 | 1k 5% 0.1W      |
| 3148 | 4822 117 10833 | 10k 1% 0.1W    | 3264 | 4822 050 21001 | 100Ω 1% 0.6W | 3453 | 4822 050 21803 | 18k 1% 0.6W      | 3566 | 4822 117 11383 | 12k 1% 0.1W     |
|      |                |                | 3281 | 4822 050 16802 | 6k8 1% 0.4W  |      |                |                  | 3567 | 4822 051 20101 | 100Ω 5% 0.1W    |
| 3149 | 4822 117 10833 | 10k 1% 0.1W    | 3282 | 4822 050 16802 | 6k8 1% 0.4W  | 3454 | 4822 117 10833 | 10k 1% 0.1W      | 3568 | 4822 051 20101 | 100Ω 5% 0.1W    |
| 3150 | 4822 050 21004 | 100k 1% 0.6W   | 3283 | 4822 051 20822 | 8k2 5% 0.1W  | 3455 | 4822 051 20393 | 39k 5% 0.1W      | 3569 | 4822 051 20101 | 100Ω 5% 0.1W    |
| 3151 | 4822 050 24703 | 47k 1% 0.6W    | 3284 | 4822 050 28202 | 8k2 1% 0.6W  | 3456 | 4822 051 20124 | 120k 5% 0.1W     | 3570 | 4822 051 20101 | 100Ω 5% 0.1W    |
| 3152 | 4822 050 22709 | 27Ω 1% 0.6W    | 3285 | 4822 051 20101 | 100Ω 5% 0.1W | 3457 | 4822 050 21803 | 18k 1% 0.6W      | 3571 | 4822 051 20101 | 100Ω 5% 0.1W    |
| 3153 | 4822 116 81849 | 220k 5%        | 3286 | 4822 051 20101 | 100Ω 5% 0.1W | 3458 | 4822 117 10833 | 10k 1% 0.1W      | 3572 | 4822 051 20101 | 100Ω 5% 0.1W    |
| 3154 | 4822 116 52271 | 33k 5% 0.5W    |      |                |              | 3459 | 4822 051 20682 | 6k8 5% 0.1W      |      |                |                 |
| 3155 | 4822 050 11002 | 1k 1% 0.4W     | 3287 | 4822 050 12703 | 27k 1% 0.4W  | 3460 | 4822 050 21202 | 1k2 1% 0.6W      | 3573 | 4822 051 20101 | 100Ω 5% 0.1W    |
| 3156 | 4822 117 1267  |                |      |                |              |      |                |                  |      |                |                 |



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|----------------|-----------------|------|----------------|----------------|------|----------------|------------------|------|----------------|------------------|
| 5322 390 20011 | VET SILIC.P4    | 2774 | 4822 126 14102 | 2KV            | 3788 | 4822 117 10833 | 10k 1% 0.1W      | 1158 | 3138 128 59270 | EARPHONE PCB     |
| 3138 128 78420 | 20GR CRT SOCKET | 2776 | 4822 126 13196 | 10nF 20% 2KV   | 3789 | 4822 117 10834 | 47k 1% 0.1W      | 1032 | 4822 267 31526 | ASSY             |
|                |                 | 2777 | 4822 252 60127 | CER2 SMD 25V   | 3790 | 4822 051 20229 | 22Ω 5% 0.1W      | 1033 | 4822 267 31526 | CON BM PHONE     |
|                |                 | 2778 | 4822 122 33177 | 100N PM10 R    | 3791 | 4822 050 13302 | 3k3 1% 0.4W      |      |                | H 01P F 3.5 ST B |
|                |                 | 2779 | 4822 252 60127 | DSP-201M-C04F  | 3792 | 4822 117 11139 | 1k5 1% 0.1W      |      |                | CON BM PHONE     |
|                |                 | 2780 | 4822 252 60127 | DSP-201M-C04F  | 3793 | 4822 051 20105 | 1M 5% 0.1W       |      |                | H 01P F 3.5 ST B |
|                |                 | 2781 | 4822 122 33177 | 10nF 20% 50V   | 3794 | 4822 051 20561 | 560Ω 5% 0.1W     |      |                |                  |
|                |                 | 2782 | 4822 124 40201 | 1000μF 20% 16V | 3795 | 4822 051 20182 | 1k8 5% 0.1W      |      |                |                  |
|                |                 | 2783 | 4822 124 40201 | 1000μF 20% 16V | 3796 | 4822 051 20562 | 5k6 5% 0.1W      |      |                |                  |
|                |                 | 2784 | 4822 126 13196 | CER2 SMD 25V   | 3797 | 4822 051 20332 | 3k3 5% 0.1W      |      |                |                  |
|                |                 | 2785 | 4822 126 13196 | 100N PM10 R    | 3798 | 4822 051 20102 | 1k 5% 0.1W       |      |                |                  |
|                |                 | 2786 | 4822 126 13196 | CER2 SMD 25V   | 3799 | 4822 051 20101 | 100Ω 5% 0.1W     |      |                |                  |
|                |                 | 2787 | 4822 126 13196 | 100N PM10 R    | 3800 | 4822 051 20479 | 47Ω 5% 0.1W      |      |                |                  |
|                |                 | 2788 | 4822 126 13196 | CER2 SMD 25V   | 3801 | 4822 051 20101 | 100Ω 5% 0.1W     |      |                |                  |
|                |                 | 2789 | 4822 126 13196 | 100N PM10 R    | 3802 | 4822 051 20101 | 100Ω 5% 0.1W     |      |                |                  |
|                |                 | 2791 | 5322 124 40641 | 10μF 20% 100V  | 3803 | 4822 116 82778 | 402 5% 1/6W      |      |                |                  |
|                |                 | 2792 | 5322 124 40641 | 10μF 20% 100V  | 3804 | 4822 051 20102 | 1k 5% 0.1W       |      |                |                  |
|                |                 | 2793 | 5322 124 40641 | 10μF 20% 100V  | 3806 | 4822 051 20102 | 1k 5% 0.1W       |      |                |                  |
|                |                 |      |                |                | 3807 | 4822 051 20102 | 1k 5% 0.1W       |      |                |                  |
|                |                 |      |                |                | 3808 | 4822 051 20102 | 1k 5% 0.1W       |      |                |                  |
|                |                 |      |                |                | 3811 | 4822 050 21502 | 1k5 1% 0.6W      |      |                |                  |
|                |                 |      |                |                | 3812 | 4822 116 80548 | 15k 5% 0.5W      |      |                |                  |
|                |                 |      |                |                | 3814 | 4822 117 10353 | 150Ω 1% 0.1W     |      |                |                  |
|                |                 |      |                |                | 3815 | 4822 051 20101 | 100Ω 5% 0.1W     |      |                |                  |
|                |                 |      |                |                | 3816 | 4822 051 20271 | 270Ω 5% 0.1W     |      |                |                  |
|                |                 |      |                |                | 3829 | 4822 051 20101 | 100Ω 5% 0.1W     |      |                |                  |
|                |                 |      |                |                | 3831 | 4822 051 20101 | 100Ω 5% 0.1W     |      |                |                  |
|                |                 |      |                |                | 3832 | 4822 051 20101 | 100Ω 5% 0.1W     |      |                |                  |
|                |                 |      |                |                |      |                |                  |      |                |                  |
|                |                 |      |                |                | 5702 | 4822 152 20596 | IND FXD SP0305 A |      |                |                  |
|                |                 |      |                |                | 5703 | 4822 157 53519 | IND FXD SP0406 A |      |                |                  |
|                |                 |      |                |                | 5704 | 4822 152 20596 | IND FXD SP0305 A |      |                |                  |
|                |                 |      |                |                | 5705 | 4822 152 20596 | 4U7 PM10 B       |      |                |                  |
|                |                 |      |                |                | 5706 | 4822 152 20596 | IND FXD SP0305 A |      |                |                  |
|                |                 |      |                |                | 5707 | 4822 152 20596 | 4U7 PM10 B       |      |                |                  |
|                |                 |      |                |                | 5708 | 4822 152 20596 | IND FXD SP0305 A |      |                |                  |
|                |                 |      |                |                | 5709 | 4822 157 53189 | CHOKE COIL       |      |                |                  |
|                |                 |      |                |                | 5710 | 4822 152 20596 | 5.0μH PM10       |      |                |                  |
|                |                 |      |                |                | 5711 | 4822 152 20596 | IND FXD SP0305 A |      |                |                  |
|                |                 |      |                |                | 5712 | 4822 152 20596 | 4U7 PM10 B       |      |                |                  |
|                |                 |      |                |                | 5713 | 4822 152 20596 | IND FXD SP0305 A |      |                |                  |
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|------|----------------|----------|
| 6001 | 4822 130 31631 | BYV10-20 |
| 6002 | 5322 130 34337 | BAV99    |
| 6003 | 5322 130 34337 | BAV99    |
| 6004 | 5322 130 34337 | BAV99    |
| 6005 | 5322 130 34337 | BAV99    |



|      |                |         |
|------|----------------|---------|
| 7001 | 4822 209 16095 | BA7657F |
|------|----------------|---------|

### 1162 Encoder panel

#### Various

|      |                |                     |
|------|----------------|---------------------|
| 1162 | 3138 128 59310 | ENCODER PCB<br>ASSY |
| 1247 | 4822 273 10344 | ROT. ENCODER<br>20P |
| 1248 | 4822 276 13249 | SWI TACT B          |
| 1249 | 4822 276 13249 | SWI TACT B          |



|      |                |         |
|------|----------------|---------|
| 6291 | 4822 130 83789 | L-59GYC |
|------|----------------|---------|

### 1163 Power switch panel

#### Various

|      |                |                                |
|------|----------------|--------------------------------|
| 1163 | 3138 128 59320 | DC POWER<br>SWITCH PCB<br>ASSY |
| 1199 | 4822 276 13886 | SWITCH 2P<br>PUSH BUTTON       |

### 1167 Speaker ass'y

#### Various

|      |                |                               |
|------|----------------|-------------------------------|
| 1167 | 3138 128 63030 | SPEAKER ASSY                  |
|      | 3138 104 41490 | SPEAKER HORN                  |
|      | 4822 701 14688 | RUBBER<br>SUPPORT-SPEA<br>KER |
|      | 3138 101 31440 | SPEAKER<br>SPRING             |



|      |                |            |
|------|----------------|------------|
| 5001 | 4822 240 10265 | 8 OHM/2.5W |
|------|----------------|------------|

### 1168 Speaker ass'y

#### Various

|      |                |                               |
|------|----------------|-------------------------------|
| 1168 | 3138 128 63030 | SPEAKER ASSY                  |
|      | 3138 104 41490 | SPEAKER HORN                  |
|      | 4822 701 14688 | RUBBER<br>SUPPORT-SPEA<br>KER |
|      | 3138 101 31440 | SPEAKER<br>SPRING             |



|      |                |            |
|------|----------------|------------|
| 5001 | 4822 240 10265 | 8 OHM/2.5W |
|------|----------------|------------|

### 1169 Microphone ass'y

#### Various

|      |                |                   |
|------|----------------|-------------------|
| 1169 | 3138 128 63200 | MIC PHONE<br>ASSY |
|      | 4822 242 30337 | WM-55A103         |
|      | 3138 128 78440 | 3P CONNECTOR      |

## Quick Reference for 17" and 19" Monitors

## Major Difference Between 19A580BQ/74C And 17A580BQ/74C

| ITEM \ MODEL<br>12 NC | 19A580BQ/74C                         | 17A580BQ/74C                        |
|-----------------------|--------------------------------------|-------------------------------------|
| 1                     | 3138 107 94230 (Front Cabinet Assy)  | 3138 107 94670 (Front Cabinet Assy) |
|                       | 3138 104 39260(Front Cabinet)        | 3138 104 40530 (Front Cabinet )     |
|                       | 3138 104 39310(LENS)                 | 3138 104 40590(LENS)                |
|                       | 3138 104 39320(Function Knob)        | 3138 104 40580(Function Knob)       |
|                       | x                                    | 3138 104 40600(Speaker-Grille)      |
|                       | 3138 104 39350(Speaker-Panel - R)    | x                                   |
|                       | 3138 104 39340(Speaker Panel -L)     | x                                   |
| 2                     | 3138 104 39300(Rotary Knob)          | 3138 104 40720(Rotary Knob)         |
| 8                     | 3138 104 39380(Power Knob)           | 3138 104 40710(Power Knob)          |
| 10                    | 3138 107 94440(Cable Cover Assy)     | 3138 107 94730(Cable Cover Assy)    |
|                       | 3138 104 39330(Cable Cover)          | 3138 104 40610(Cable Cover)         |
|                       | 3138 106 49960(P.E. BAG)             | 3138 106 32610(P.E. BAG)            |
| 25                    | 3138 107 94240(Pedestal Assy)        | 3138 107 94680(Bottom Plate Assy)   |
|                       | 3138 104 39280(Bottom)               | 3138 104 40550(Bottom)              |
|                       | 3138 104 39290(Base - Pedestal)      | 3138 104 40560(Base - Pedestal)     |
| 26                    | 3138 104 39270(Back Cover)           | 3138 107 94960(Back Cover Assy)     |
|                       | x                                    | 3138 104 40541(Back Cover)          |
|                       | x                                    | 3138 104 41711(USB Cover)           |
| 27                    | 3138 104 40950(USB Cover)            | x                                   |
| 125                   | 3138 105 35110(D.F.U.)               | 3138 105 35190(D.F.U.)              |
| 450                   | 3138 106 51130(Carton)               | 3138 106 51790(Carton)              |
| 451                   | 3138 106 51100(Cushion-Top-L)        | 3138 106 51340(Cushion-Top-L)       |
| 452                   | 3138 106 51110(Cushion-Top-R)        | 3138 106 51350(Cushion-Top-R)       |
| 453                   | 3138 106 51120( Cushion-Bottom)      | 3138 106 51360(Cushion-Bottom)      |
| 454                   | 3138 106 38440( P.E. BAG for SET)    | 3138 106 39690(P.E. BAG for SET)    |
| 1155                  | 4822 131 11275 M46LLQ 683X01( S)     | 4822 131 11277 M41KSX 683X24 ( T)   |
| 1156                  | 3138 128 62000(Main PCB Assy)        | 3138 128 62450(Main PCB Assy)       |
| 1158                  | 3138 128 59270(Earphone PCB Assy)    | 3138 128 63380(Earphone PCB Assy)   |
| 1166                  | 3138 128 77960(Degaussing Coil Assy) | 3138 128 77930(Degaussing PCB Assy) |
| 8160                  | x                                    | 3138 128 72740(Rotation Coil)       |

## Difference List Between 3138 128 59270 And 3138 128 63380

| ITEM \ 12 NC | 3138 128 59270(Earphone PCB Assy) | 3138 128 63380(Earphone PCB Assy) |
|--------------|-----------------------------------|-----------------------------------|
| 2081         | 5322 122 32654(22n/50v)           | x                                 |
| 2082         | 5322 122 32654(22n/50v)           | x                                 |

## Difference List

## Difference List Between 3138 128 62000 And 3138 128 62450

| ITEM | MODEL<br>12 NC | 19A580BQ/74C                              | 17A580BQ/74C                              |
|------|----------------|---|---|
|      |                | Main PCB Assy<br>( 3138 128 62000)        | Main PCB Assy<br>( 3138 128 62450)        |
| 1263 |                | 3138 128 63080(Eeprom Assy )              | 3138 128 63320(Eeprom Assy)               |
| 2603 |                | 4822 124 22669(1u/50v)                    | 4822 124 23539(10u/50v)                   |
| 2674 |                | 4822 121 70411(220n/250v)                 | 4822 121 10708(180n/250v)                 |
| 2681 |                | 4822 121 70241(120n/250v)                 | 4822 121 70598(82n/400v)                  |
| 3175 |                | 4822 050 24703(47 k)                      | 4822 050 23904(39k)                       |
| 3214 |                | 4822 051 20102(1 k)                       | 4822 117 10833(10k)                       |
| 3239 |                | 4822 052 10478(4R7)                       | 4822 152 20596(4u7)                       |
| 3245 |                | 4822 050 22203(22 k)                      | 4822 050 21003(10k)                       |
| 3481 |                | 4822 050 26203(62 k)                      | 4822 050 25603(56k)                       |
| 3501 |                | 4822 052 11228(2R2)                       | 4822 052 11108(1 R)                       |
| 3510 |                | 4822 052 11228(2R2)                       | 4822 052 11108(1 R)                       |
| 3556 |                | 4822 117 10442(10 R)                      | 4822 117 12834(22 R)                      |
| 3562 |                | 4822 050 21203(12 k)                      | 4822 050 28202(8K2)                       |
| 3563 |                | 4822 117 11383(12 k)                      | 4822 051 20273(27 K)                      |
| 3564 |                | 4822 051 20102(1 k)                       | 4822 051 20562(5K6)                       |
| 3566 |                | 4822 117 11383(12 k)                      | 4822 117 10834(47 K)                      |
| 3665 |                | 4822 117 10833(10 k)                      | 4822 117 11383(12 K)                      |
| 5101 |                | 3138 118 74160<br>(Line Filter 14 mH Min) | x   |
| 5101 |                | x   | 3138 178 70890<br>(Line Filter 15 mH Min) |
| 5102 |                | 3138 118 74160<br>(Line Filter 14 mH Min) | x   |

## Difference List

| ITEM | MODEL<br>12 NC | 19A580BQ/74C                         | 19A580BQ/00C                         |
|------|----------------|--------------------------------------|--------------------------------------|
|      |                |                                      |                                      |
| 125  |                | 3138 105 35110<br>D.F.U.             | 3138 105 35260<br>D.F.U.             |
| 126  |                | 3138 105 35210<br>QUICK SET UP GUIDE | 3138 105 35200<br>QUICK SET UP GUIDE |
| 127  |                | x                                    | 3138 105 35330<br>QUICK SET UP GUIDE |
| 450  |                | 3138 106 51130<br>CARTON             | 3138 106 51800<br>CARTON             |
| 1151 |                | 3138 128 75240<br>MAINS CORD         | 3138 128 75250<br>MAINS CORD         |

## CM5800 BRIEF

### A. GENERAL

The CM5800 is a Digitally Controlled Autoscan Color Display Monitor with 19" Low Emission CRT which is specially designed for low cost and high performance. This monitor can operate at horizontal scan frequencies from 30 to 95 kHz and vertical scan frequencies from 47 to 160 Hz.

This monitor is equipped with an embedded microcontroller which can preset the required modes. The CM5800 provides many functions, such as digitally adjustable picture, DDC1/2B, power management, low emission, high immunity, etc.

This monitor complies with MPRII low emission standard and also fulfills TCO'91 automatic power saving requirements. To reduce power consumption to less than 15 watts in standby or suspend mode and less than 5 watts in off mode, the monitor also complies with the energy star computer program initiated by the EPA.

### B. DESCRIPTION OF CM5800

This description mainly introduces the functions, including power supply / power saving management, horizontal / vertical deflection, video amplifier, microcontroller, etc.

#### 1. POWER SUPPLY / POWER SAVING MANAGEMENT

##### POWER SUPPLY:

This monitor is designed with an off-line flyback switch mode power supply which can operate with input from 90 VAC to 270 VAC . The power supply uses an IC (L4990 ) for current mode pwm controller and drives the mosfet switch directly. The control scheme transforms a switching converter from a voltage source into a multi-output voltage. The control concept exhibits many desirable properties such as inherent over-load protection, stable and fast system response.

The maximum power consumption is up to 130 watts. A power limiting circuit is added for safety reasons.

Secondary feedback via an optocoupler is used to obtain a stable output voltage. The secondary feedback supplies all necessary voltages for deflection and video. Voltage stabilizer IC is used to supply the small signals and microcontroller/EPROM.

##### POWER SAVING MANAGEMENT:

This monitor can reduce power consumption while no sync pulses are detected by microcontroller and automatically recover to normal power when sync signals are detected by microcontroller.

During power saving mode, the second power supply still delivers 5V to  $\mu$ c (CPU).

The consumed power is less than 15 watts during standby / suspend modes, and less than 5 watts during off mode.

#### 2. HORIZONTAL / VERTICAL DEFLECTION

##### HORIZONTAL DEFLECTION:

##### SYNC PROCESSING PART:

The heart of horizontal/vertical deflection controller is TDA4858 which can offer complete and efficient small signal sync processing for autosync monitors. This device is fully dc controllable and can be used in applications with a microcontroller as well as stand-alone with potentiometer control.

This controller provides sync processing, which can accept separate , composite (H+V) and sync-on-video input signals. A very short setting time after mode change for protection of external power components has been taken.

The TDA4858 provides extensive functions like a flexible smps block and a geometry control with facilities ,leading to excellent picture quality. This device also can directly drive the vertical deflection output stage ,the line driver stage , the E/W output stage and the EHT stage. All controls are dc and tracked with the incoming frequencies.

#### **DEFLECTION PART:**

The horizontal deflection is built around the buck converter which makes it possible to combine H-deflection and EHT generator and allows size and e/w correction without influencing EHT.

The flyback pulse from the buck converter is used by the line output.

Transformer (LOT) generates the required 26.0kV anode voltage.

The adjustable focus (G3) and screen (G2) voltages are internally derived from the anode voltage. Other secondary windings are used to generate the voltages for G1 and horizontal raster DC shift. For 19 inch monitor also provides dynamic focus on G4 to get a good focus performance.(G4 also adjustable).

To guarantee constant EHT over the whole frequency range , the B+ is made tracked with H-frequency by means of a step down converter.

The horizontal size and east/west correction are obtained by varying the voltage of buck converter of the lower deflection a circuit.

Five-capacitors switch and dc controlled linearity coil are designed for optimal screen linearity.

For safety reasons ,x-ray protection circuit is included ,and the control information sensing by TDA4858 will shut down the h-deflection (and thereby EHT generator) if the anode voltage exceeds a certain value.

This circuit is also used for beam current overload protection . Shut down the deflection in case the total beam current exceeds a certain limit to protect both CRT and LOT.

#### **VERTICAL DEFLECTION:**

The majority of vertical deflection functions is integrated by two ICs ; TDA4858 and TDA8172.

The TDA4858 takes care of sync polarity correction ,automatic catching and holding of the vertical oscillator ,generation of sawtooth drive current for vertical output and vertical s-correction ,and generation of a correct V-blanking pulse for video blanking during vertical retrace lines.

The TDA8172 which is a dc-coupled vertical deflection booster with differential input signals is suitable for color monitor. The output stage has thermal and soar protection ,and high linear sawtooth signal amplification to obtain the required vertical deflection current.

To obtain a fast vertical retrace for non-VGA mode an external flyback supply is used.



## CM5800 BRIEF

### 3. VIDEO AMPLIFIER

The heart of the video circuit is TDA4885. This controller can drive the hybrid post-amp. CR6927 by buffer stage. The video DC level and gain at the cathode will be controlled by the software.

The red, green and blue video signals are amplified and inverted by the preamplifier to output stage and AC coupled to the CRT cathodes.

Three cut-off adjustments are provided to set the video black level at cathode for all three guns. Also three individual gain adjustments are provided to adjust the white point at maximum swing. Both cut-off and gain controls are digital type controlled by microprocessor. For limiting the beam current and preventing local doming, the beam current limit will automatically reduce the video swing in case the maximum beam current is exceeded (ABL adjustment: R3647).

Brightness control, which is controlled by TDA4885, reduces power consumption in video amplifier. To suppress the vertical retrace lines during vertical retrace, a vertical blanking pulse is added to grid 1.

A spot-killer circuit is also added to prevent CRT spot burn-in when the set is switched off.

DDC 1/2B:

Via SDA, data about the monitor, including the serial number, production codes, CRT type and applicable timings are stored in the EEPROM (24IC21). To avoid picture interference, the reading and writing processes are executed during vertical blanking which is informed by the vertical sync.

### 4. MICROCONTROLLER

#### GENERAL DESCRIPTION:

The Philips P87C380 microprocessor is used to control the monitor. The preset data are stored in EEPROM ST24W08.

#### HARDWARE DEFINITION:

##### A. KEYBOARD

There are 3 key pads and one rotary encoder at the front of monitor for the OSD control.

- OSD function key:

Push it to confirm entrance or exit from the OSD window

- Encoder:

To select or adjust the parameters which are chosen from OSD.

- Brightness key:

Push it, the OSD shows the window, then adjust with the encoder.

- Contrast key:

Push it, the OSD shows the window, then adjust with the encoder.

B. OSD WILL DISAPPEAR AND SAVE AUTOMATICALLY AFTER NON-OPERATION

C. SOFTWARE WILL CONTROL THE DPMS ACCORDING TO THE SYNC STATUS.

## D. VIDEO PRESET MODES

Preset video resolution and sync. Polarities

| Resolution modes | H frequency | V frequency        | H | V |
|------------------|-------------|--------------------|---|---|
| 720 x 400        | 31.469K     | 70.087Hz (VGA)     | - | + |
| 640 x 480        | 31.469K     | 59.940Hz (VESA/60) | - | - |
| 640 x 480        | 37.500K     | 75.000Hz (VESA/75) | - | - |
| 640 x 480        | 43.269K     | 85.008Hz (VESA/85) | - | - |
| 800 x 600        | 37.879K     | 60.317Hz (VESA/60) | + | + |
| 800 x 600        | 46.875K     | 75.000Hz (VESA/75) | + | + |
| 800 x 600        | 53.674K     | 85.061Hz (VESA/85) | + | + |
| 1024 x 768       | 48.363K     | 60.004Hz (VESA/60) | - | - |
| 1024 x 768       | 60.023K     | 75.029Hz (VESA/75) | + | + |
| 1024 x 768       | 68.677K     | 84.997Hz (VESA/85) | + | + |
| 1280 x 1024      | 63.981K     | 60.020Hz (VESA/60) | + | + |
| 1280 x 1024      | 80.000K     | 75.000Hz (VESA/75) | + | + |
| 1280 x 1024      | 91.146K     | 85.024Hz (VESA/85) | + | + |
| 1600 x 1200      | 75.000K     | 60.000Hz (VESA/60) | + | + |
| 1600 x 1200      | 93.750K     | 75.000Hz (VESA/75) | + | + |



# Service Information

Service information 4822 727 21038 is herewith cancelled.

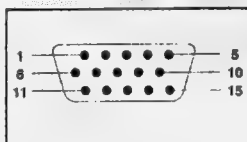
This [DDC Module (DDC cable)= 4822 320 12004(=4822 724 27550)] and [DDC V2(DDCV2N.EXE) software(3.5" disk)=4822 711 00024(= 4822 724 27560)] are used for "BU Monitor - Chungli product range" which incorporates a DDC1/DDC2B function that allows bi-directional communication between the monitor and PC system for optimal video configuration. [July 01 1997, Revision 2.0], which upgrades the software and service information(4822 727 21027 & 4822 727 21038), is fully compatible with previous one.

## Additional information :

Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification (EDID) information may be also be obtained from VESA.

## Pin assignment

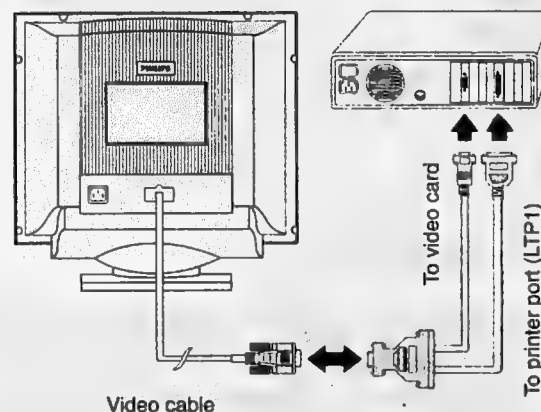
The 15-pin D-sub connector (male) of the signal cable (3 rows) for DDC feature :



| Pin No. | Assignment                           | Pin No. | Assignment                           |
|---------|--------------------------------------|---------|--------------------------------------|
| 1       | Red video input                      | 9       | No pin                               |
| 2       | Green video input                    | 10      | Logic ground                         |
| 3       | Blue video input                     | 11      | Identical output connected to pin 10 |
| 4       | Identical output connected to pin 10 | 12      | Serial data line (SDA)               |
| 5       | Ground                               | 13      | H.sync                               |
| 6       | Red video ground                     | 14      | V. sync (VCLK for DDC)               |
| 7       | Green video ground                   | 15      | Data clock (SCL)                     |
| 8       | Blue video ground                    |         |                                      |

## Connection

(Rear of the monitor)



## DDC data re-programming

### 1. General

In case the DDC data memory IC, replaced due to a defect the data contents of this IC have to be re-programmed via a PC.

In case of replacement of the video board it is advised to re-soldered DDC IC from the old board onto the new board, in this case the IC dose not need to be re-programmed.

### 2. DDCV2N.EXE can be used for :

EDID Structure Version/Revision  
Version : 1  
Revision : 0 (text file)

and

Version : 1  
Revision : 1 (hex file)

## INSTRUCTIONS

## DDC Reprogramming Instruction (for PHILIPS Branded models)

## System Requirements

DDC Module (DDC cable), P/N = 4822 320 12004

An Intel 386 (or above) PC or compatible

DOS 6.0 or above

DDCV2N.EXE software

## Procedure

Connect DDC Cable as shown in cover page.

Insert diskette in Drive a: Select Run "DDCV2N.EXE" under DOS or Win.

Press "Enter" at the introduction screen

## Menu Configuration:

| File                 | R/W                  | Setup          | Quit |
|----------------------|----------------------|----------------|------|
| Load EDID            | Write EDID to EEPROM | Options        |      |
| Load txt file (V1.0) | Read From EEPROM     | Barcode format |      |
| Save EDID            | Edit EDID Code       |                |      |
| Save txt File        | Auto Scan            |                |      |
| Convert EDID Code    |                      |                |      |
| Os shell             |                      |                |      |
| Exit                 |                      |                |      |

## General :

## 1. How to change drive

Use arrow keys to highlight "Options" under the Setup menu, Press "Enter".

Press "F2", then Press "ESC", fill in "A" or "C".

[(If your .HEX files for different Model numbers in drive "A", then fill in "A").,

(If your .HEX files for different Model numbers in drive "C", then fill in "C").

Normally, to read DDC data from EEPROM of Monitor is enough.]

Press "Enter", then Press "ESC"

## 2. How to select .HEX files for different Model numbers

example:

Use arrow keys to highlight "Load EDID" under the File menu, Press "Enter"

Bring up BRANDED\ Press "Enter"

Bring up

 ..\
   
21B772BE\
   
CM58\
 

← select, Press "Enter"

Bring up

 ..\
   
19A74C.HEX
   
19A00C.HEX
 

← at this highlight area, Press "Enter", then go back to last screen

← select for 19A580BQ/74C

← select for 19A580BQ/00C



### How to write DDC hex files to Monitor

Use arrow keys to highlight **"Options"** under the Setup menu, Press **"Enter"**

Tab down to ID Serial Number, Use down arrow key to place the asterisk (\*) beside "store in DEC with LSB first". Press **"control/enter"** to save.  
(Ensure the top asterisk (\*) is beside in store in HEX with LSB first.)

Use arrow keys to highlight **"Load EDID"** under the file menu, Press **"Enter"**.

Use arrow keys to highlight **"BRANDED"**, Press **"Enter"**.

Use arrow keys to highlight **"the model list under subdirectly"**, Press **"Enter"**.

Use arrow keys to highlight **"Write EDID to EEPROM"** under the R/W menu, Press **"Enter"**.

Use arrow keys to highlight **"Read from EEPROM"** under the R/W menu, Press **"Enter"**.

Use arrow keys to highlight **"Edit EDID Code"** under the R/W menu, Press **"Enter"**.

Verify the ID Serial number on the screen matches the serial number of the unit.

Verify EDID Structure Version is "Version :1, Revision :1"

Press **"ESC"**

Use arrow keys to highlight **"Quit"**, Press **"Enter"**.

### Menu Configuration:

| File                 | R/W                  | Setup          | Quit |
|----------------------|----------------------|----------------|------|
| Load EDID            | Write EDID to EEPROM | Options        |      |
| Load txt file (V1.0) | Read From EEPROM     | Barcode format |      |
| Save EDID            | Edit EDID Code       |                |      |
| Save txt File        | Auto Scan            |                |      |
| Convert EDID Code    |                      |                |      |
| Os shell             |                      |                |      |
| Exit                 |                      |                |      |

Remark: ID product code and ID Serial Number setting are for "PHILIPS" & "STENCIL" DDC TEXT

## INSTRUCTIONS

## How to change the Year, Week &amp; Serial number of Monitor (for BRANDED models)

Use arrow keys to highlight **"Barcode format"**, under the Setup menu, Press **"Enter"**.

Bring up :

Barcode example : 9741222266  
Barcode format : YYWWSSSSSS

Fill in 9741222266, press "Enter"

Fill in yywwssssss, press "Enter"

continue :

Barcode example : 9741222266  
Barcode format : YYWWSSSSSS

-----  
Manufacture Year : 1997  
Manufacture Week : 41  
Serial no. : 222266  
-----

-----  
EDID [16] Week : 29  
EDID [17] Year : 07 [Year-1990]  
EDID [12..15] S/N. : 0003643a  
-----

data correct ? (Y/N) Y

Fill in "Y", don't press "Enter"

There is a description at the lower of the screen for Barcode format as below.

Barcode format : Y,W,S,X,- (year,week,s/no,ignore,fixed)

Y stands for "year".  
W stands for "week"  
S stands for "s/no (serial number)".  
X stands for "ignore". Allow user to fill in any 'character' or 'numeric'.  
- stands for "fixed". User have to fill in Special 'character' or 'numeric' for "AutoScan" if user fill in '-' at "Barcode format :".

Use arrow keys to highlight **"Auto Scan"** under the R/W menu, Press **"Enter"**.

Bring up:

Auto Scan

◆◆△△□□□□□□

← year, week, serial number can be changed

- SerialNumber
- ◆ YearCode
- △ WeekCode
- \* don't care

Fill in "Barcode data (for instance: 9741222266)" beside Auto Scan, press **"Enter"**

9745000240

9640001000

Press **"ESC"** **"ESC"**, return to R/W menu.

## How to change the serial number of Monitor (for PCEC models)

Use arrow keys to highlight **"Barcode format"**, under the Setup menu, Press **"Enter"**.

Bring up : Barcode example : 5800C12345678  
Barcode format : XXXXXSSSSSSSS

Fill in 5800C12345678, press "Enter"  
Fill in xxxxxxxxsssss, press "Enter"

continued : Barcode example : 5800C12345678  
Barcode format : XXXXXSSSSSSSS

-----  
Manufacture Year : 1997  
Manufacture Week : 40  
Serial no. : 12345678  
Serial no. ASCII : 5800C12345678  
-----

(can be changed), press "Enter"  
(can be changed), press "Enter"

Fill in 5800C12345678, press "Enter"

data correct ? (Y/N) Y

Fill in "Y", don't press "Enter"

There is a description at the lower of the screen for Barcode format as below.

Barcode format : Y,W,S,X,- (year,week,s/no,ignore,fixed)

Y stands for "year".  
W stands for "week"  
S stands for "s/no (serial number)".  
X stands for "ignore". Allow user to fill in any 'character' or 'numeric'.  
- stands for "fixed". User have to fill in Special 'character' or 'numeric' for "AutoScan" if user fill in '-' at "Barcode format :".

Use arrow keys to highlight **"Auto Scan"** under the R/W menu, Press **"Enter"**.

Bring up: Auto Scan

← year, week, serial number can be changed

- ☐ SerialNumber
- ☒ YearCode
- ☐ WeekCode
- ☒ don't care

Fill in "Barcode data (for instance: 5800C12345678)" beside Auto Scan, press **"Enter"**

5800J28256153  
58008H75602720

Press **"ESC"** **"ESC"**, return to R/W menu.

**For the original DDC TEXT file:**

Use arrow keys to highlight **"Load txt file (V1.0)"** under the File menu, Press **"Enter"**

**1. Data text file editing options**

The data text file can be edited by the DOS-editor.

**2. Re-programming instructions**

- Turn on PC and monitor
- Connect the module to the PC and monitor, see connection figure on front page.
- Insert the floppy disk into drive A: and follow the following routine:
- Type "DDC" and then press "ENTER". On the screen it will show: "Adaptor check...", then the screen will display "main menu".
- Use the arrow keys to highlighting items 1, 2, 3, 4, 0 :

**Step 1** - Select item "1", which appear as a highlight, and press

"ENTER" to convert a text data into EDID data.

- Enter the text file name with directory path eg. "a:\CM0200\BND14PHL.TXT" and press "ENTER".  
The available text file on the floppy will now be converted into a binary file that can be downloaded into the memory IC.
- Press "ENTER" to continue, the program will return to main menu.

**Step 2** - Select item "2", under the main menu, and press

"ENTER" to write a complete EDID data file to EEPROM. Now, the data will be loaded into the memory IC.

- Press "ENTER" to continue, the program will return to main menu.

**Step 3** - Select item "3", under the main menu, and press

"ENTER" to verify that EDID downloading is successful. This function also can be used to view current DDC data in monitor.

- Press "ENTER" and follow the indication on the screen to return main menu.

**Step 4** - Select item "4", under the main menu, and press

"ENTER" to enter DOS prompt and DOS Editor of your system. By DOS Editor, the function allow you to modify or update DDC data eg. manufacturing week, serial number etc according to the rear cover type label of the set.

The production serial number of type label consist of:

- TY - origin of production centre
- 00 - technical service change code
- 95 - production year
- 12 - production week
- 123456 - 6 digits (max) serial number

Once the modification of DDC text file is completed under DOS Editor, Quit to DOS prompt and return to main menu by typing "EXIT" and press "ENTER". After text file is modified according above description, you can repeat the process of step 1 to step 3 to re-program DDC data again.

**Step 5** - Select item "0", under the main menu, and press

"ENTER" to quit DDC program and return to DOS prompt.

**3. Remark 1 :**

During the re-programming, it is recommended to follow step 1, step 2, and step 3.

Due to different format requirements by customer, If read DDC data from monitor by step 3, product ID and serial number will show 3 formats, <decimal>, <hexa-decimal>, and <ASCII>, the correct format can be obtained by running step 1 again (the correct format can be detected and identified automatically by step 1 from original text file).

## THE CONTROL SOFTWARE FOR MONITORS THROUGH USB

CustoMax for your monitor

version 3.0

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  - 4.5. Hardware & Software settings
  - 4.6. User guidance

---

## 1. THE CONTENT OF THE PACKAGE

In the package you should find

The USB module

The USB cable

The CD-ROM with the CustoMax software & USB device driver on it

The Directions for use

---

## 2. INSTALLATION

System requirements

Hardware : a PC which supports the USB function and has a USB outlet.

Software: Windows system which supports USB (Win 95 2.1 or Win 98 ).



Installation of USB module

1. Turn off the monitor and unplug the power cord.
2. Remove the cover of "USBAY" at the back of the monitor.
3. Insert USB module into the slot.
4. Fix the USB module to the monitor by screwing.
5. Plug-in the power cord and turn on the monitor.

To establish the USB connection

6. Insert CD-Rom
7. The two ends of USB cable attached are different. Plug-in the square end into the "upstream" outlet of the USB module.
8. Plug-in the other end into the USB outlet of the PC.
9. Windows recognises two new pieces of hardware
  - Philips USB hub
  - USB Human Interface Device

This last item is presented through a wizard.

Follow the "next" steps on screen (choose the recommended options) until installation has been finished

Usages Tips: Check device manager tab in system manager properties.

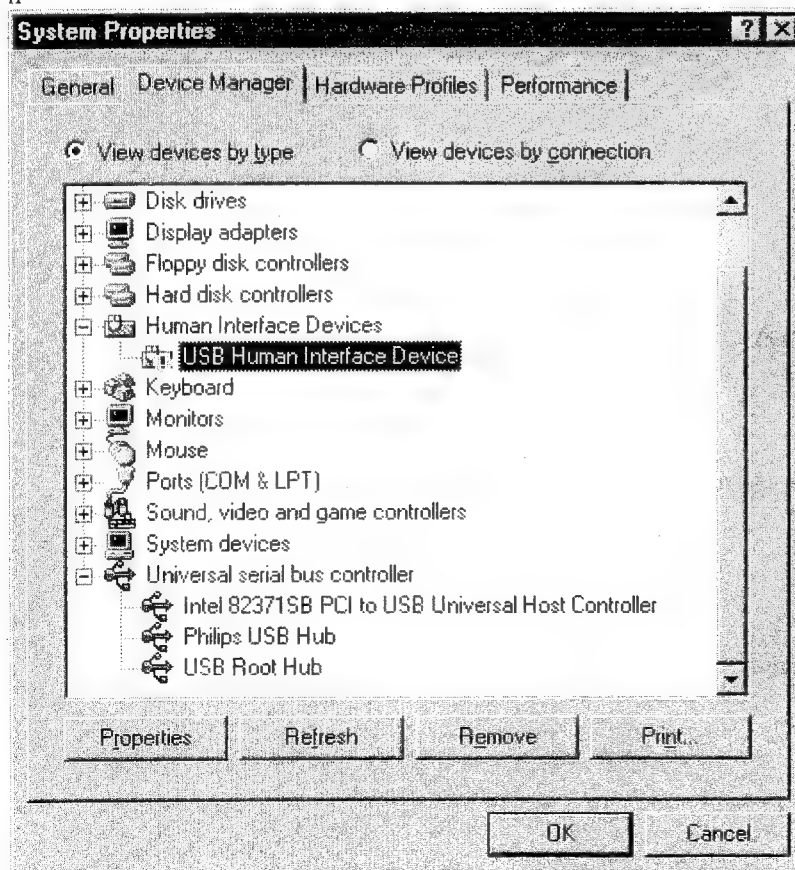
Human Interface devices

- Philips CustoMax (USB monitor control)

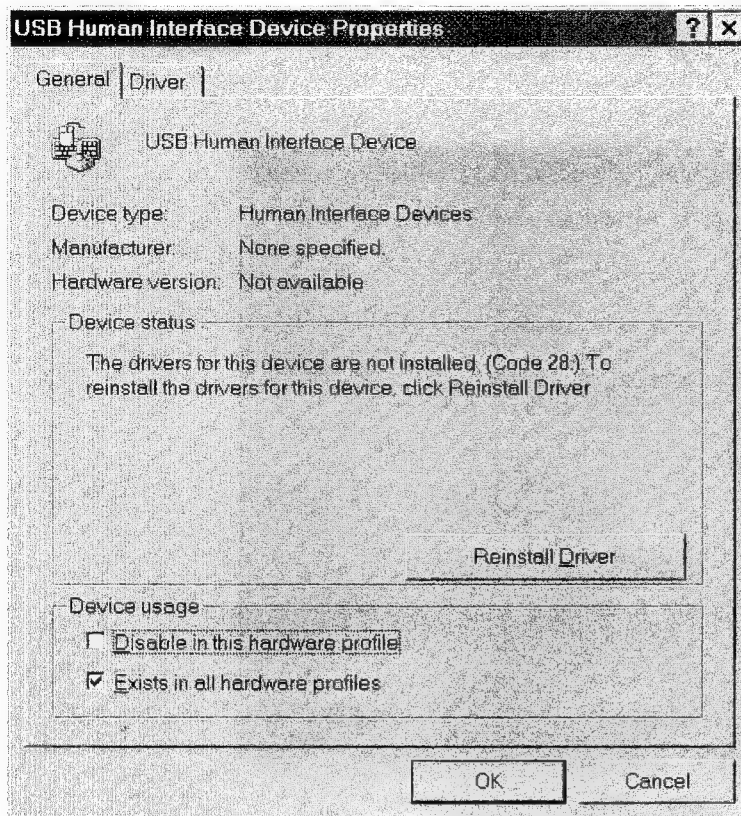
Universal serial bus controller

- Philips USB Hub

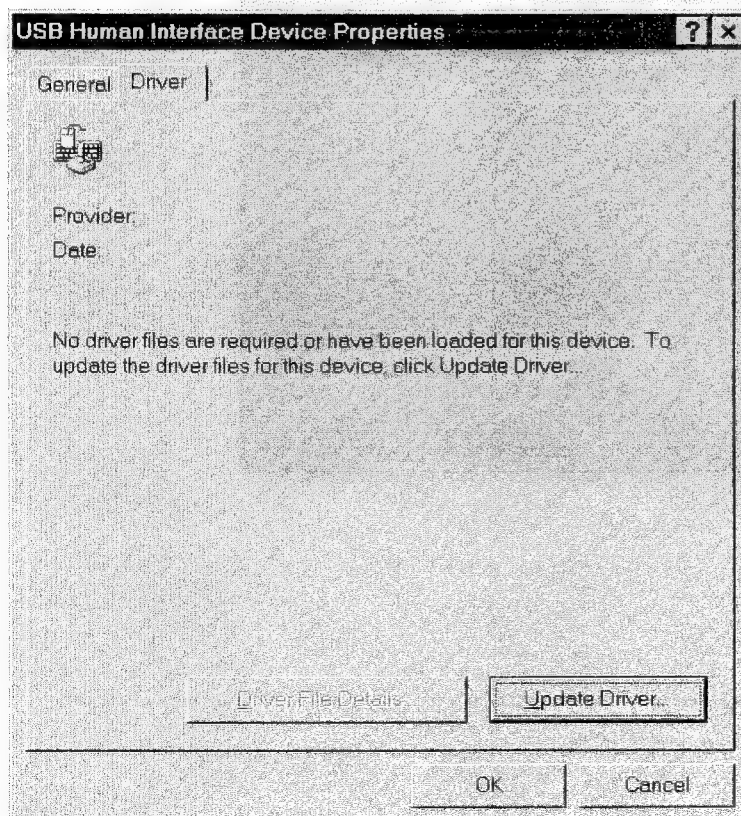
if



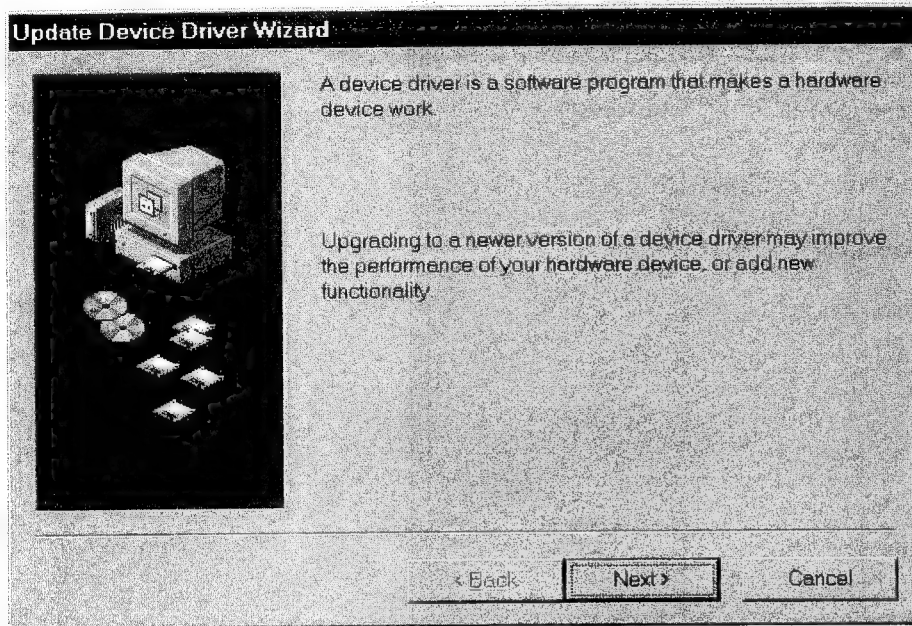
select properties



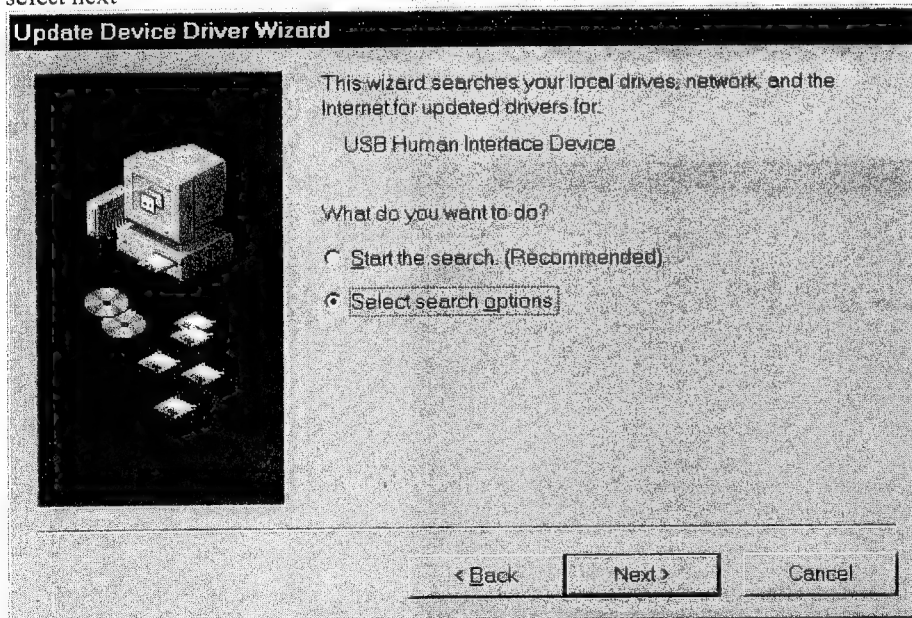
select driver



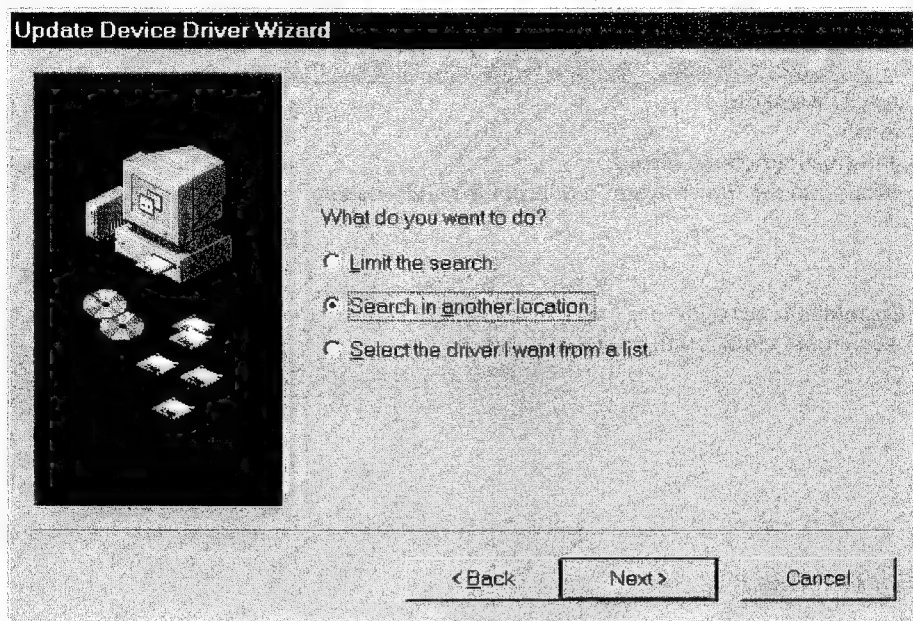
select Update Driver



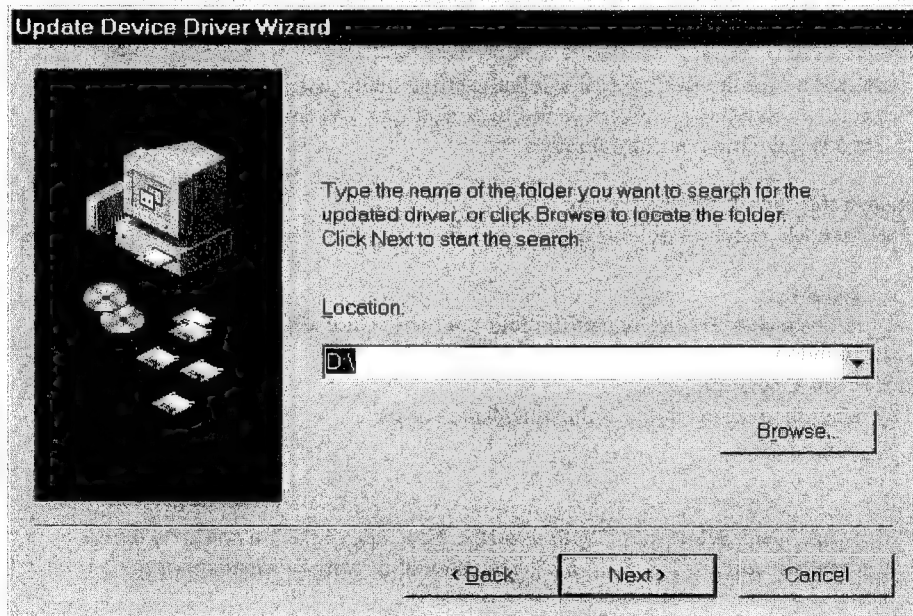
select next



select next



select next



select next

then follow Wizard

#### Installation of CustoMax

10. Double click on CD-Rom icon

11. Start the CustoMax installation program: CustoMax 3.exe

#### CustoMax

Start CustoMax using one of these four ways

1. Icon on the right-side of the taskbar
2. Tab in display properties
3. Start menu
4. ctrl-alt-c

There is no need to turn off the PC or monitor when establish USB connection.

## Installation of CustoMax

1. Install the USB module and connect the USB cable between your monitor & PC.
  2. Put the CD-ROM in the CD-ROM drive.
  3. Click on the CD-ROM icon.
  4. Follow the installation instructions on the screen.
- Plug-in the desired peripherals into the "downstream" outlets of the USB module.

## Usage tips

The shortcut to start-up CustoMax is ctrl + alt + c.  
 If installed on a network server: the settings will be stored locally.

---

## 3. CUSTOMAX 3.0. HOW IT WORKS

CustoMax 3.0 for monitors is a software program for adjusting the audio and video, screen geometry, colour quality, image quality and hardware and software settings through USB. The start-up settings of CustoMax, Window Background and Language can be changed.

Note. When CustoMax is started up for the first time, the default setting being activated will be the 'Hardware & Software Settings'. Within the 'Hardware & Software Settings' you first will have to select the type of monitor you currently have in your configuration.

Default Enables you to change the default selected menu  
 Usages tip: we recommend sound & vision as default menu.

## Main procedures for using CustoMax:

1. To select a specific part of CustoMax, choose one of the four navigation buttons on the left side of the CustoMax window.
2. Select one of the buttons in the 'Operation' area.
3. Perform adjustments by using the buttons in the 'Adjustment' area of the CustoMax window.

## Usage tips

To switch off, or on, the 'How to..' Help, select the '?' button, on the right side of the CustoMax window.  
 To perform adjustments, the contrast and brightness of the screen should be fairly normal and user controllable.

*As soon as you finish the program, a DONE is automatically executed to store all settings. Also, before changing the main menu, a DONE is automatically executed.  
 This minimizes the amount of times having to press DONE.*

---

## 4. CUSTOMAX, QUICK OVERVIEW

## 4.1. SOUND &amp; VISION CONTROL

## SOUND &amp; VISION CONTROL

To adjust audio and video levels. The options to adjust are: Mute, Volume, Balance, Bass, Treble, Brightness, and Contrast.

## MUTE

To switch off/on the sound.



## THE CONTROL SOFTWARE FOR MONITORS THROUGH USB

## VOLUME

To change the sound level.

## BALANCE

To change the sound balance.

## BASS

To change the bass level.

## TREBLE

With the 'Treble' function you can change the treble level.

## BRIGHTNESS

To change the brightness level.

## CONTRAST

To change the contrast level.

## CONTRAST PATTERN 1

To help you adjust the contrast level.

## CONTRAST PATTERN 2

To help you adjust the contrast level.

## ADJUSTMENT BUTTONS

To make adjustments to the audio and video levels.

## DONE

To save any changes and selections made before closing and returning to the display of the five main navigation and Help buttons.

## UNDO

To undo any changes and selections made in this particular part of Customax.

## Usage Tips

- ù The Mute, Volume, Balance, Bass, Treble, Brightness, and Contrast buttons appear after Sound & Vision Control has been selected.
- ù With the left mouse button a selected contrast pattern can be toggled to the foreground or background.
- ù The Adjustments Buttons only appear after an audio or video button has been selected.
- ù The Done and Undo buttons appear after one of the five main navigation buttons on the left side of the Customax window has been selected.
- ù The Undo function will only be executed after an additional confirmation has been made in the pop-up window.

## 4.3. COLOUR QUALITY CONTROL

## COLOUR QUALITY CONTROL

To adjust the colour temperature.

## DEGAUSS

To demagnetise the monitor's screen surface.

## FACTORY COLOUR PRESET

To reset the current user-defined colour will back to default. User preset 1 is reset to 9300 K, user preset 2 is reset to 6500 K, and user preset 3 is reset to 5500 K.

## FACTORY PRESET 1

To set the colour temperature to 9300 K

**FACTORY PRESET 2**

To set the colour temperature to 6500 K

**FACTORY PRESET 3**

To set the colour temperature to 5500 K

**USER DEFINABLE PRESETS 1**

To change the colour temperature to a user-defined preset.

**USER DEFINABLE PRESETS 2**

To change the colour temperature to a user-defined preset.

**USER DEFINABLE PRESETS 3**

To change the colour temperature to a user-defined preset.

**RED BACKGROUND COLOUR**

To help you adjust the colour balance setting.

**GREEN BACKGROUND COLOUR**

To help you adjust the colour balance setting.

**BLUE BACKGROUND COLOUR**

To help you adjust the colour balance setting.

**COMBINED BACKGROUND COLOUR**

To help you adjust the colour balance setting.

**WHITE BACKGROUND COLOUR**

To help you adjust the colour balance setting.

**COLOUR TRIANGLE**

To increase or decrease the proportion of each of the colours Red, Green or Blue.

**DONE**

To save any changes and selections made before closing and returning to the display of the five main navigation and Help buttons.

**UNDO**

To undo any changes and selections made in this particular part of CustoMax.

**Usage Tips**

ù The Degauss function is available under Screen Geometry Control, Colour Quality Control and Image Quality Control.

ù The number of available presets depends on the type of monitor you have selected in the Hardware & Software Settings part of CustoMax.

ù The specific colour temperatures in the three Factory Presets cannot be changed.

ù Adjustments to the colour temperature settings can only be made after first selecting one of the three user presets.

ù To undo the reset to factory default, and to change back to the last defined user preset: Press Undo. The Factory Colour Preset function will immediately be executed, but can be changed back to the last defined user preset by selecting Undo.

ù Move a Draggable Marker in the Colour Triangle, in the Adjustment area of the CustoMax window, to a new position on its axis. Alternatively, drag the central point of the triangle to a new position, or click directly on the new position in the triangle.

**HARDWARE & SOFTWARE SETTINGS****HARDWARE & SOFTWARE SETTINGS**

To influence the behaviour of your monitor.

## THE CONTROL SOFTWARE FOR MONITORS THROUGH USB

### HARDWARE & SOFTWARE SETTINGS

To influence the behaviour of your monitor.

### POWER SAVER

To reduce monitor power consumption

### START-UP' function

To activate or to select the default Navigation setting at start-up. The options are: 'Sound & Vision', 'Geometry', 'Colour Quality', 'Image Quality', or 'Hard- & Software'.

### CUSTOMAX WINDOW BACKGROUND

To select a different CustoMax window background. The options are 'Water', 'Fire', 'Air', 'Earth', 'Glas', 'Leave', 'Flowers', 'Monitor housing', 'PCB', 'Doodle' 'Solid Background 1', 'Solid Background 2'.

### LANGUAGE

To change to another language. The options are: 'UK English', 'US English', 'Deutsch', 'Français', 'Italiano' and 'Español'.

### MONITOR TYPE

To select the present type of monitor. The options are: '107', '109', and '201B'.

### HARDWARE & SOFTWARE SETTINGS DISPLAY

Provides information on the current 'Hardware & Software Settings'

### DONE

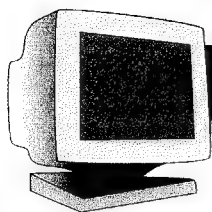
To save any changes and selections made before closing and returning to the display of the five main navigation and Help buttons.

### UNDO

To undo any changes and selections made in this particular part of CustoMax.

### Usage Tips

- ù The Power Saver function will be executed after a predetermined period of time, during which the monitor has not been used.
- ù The new Navigation default at Start-up will be executed after you have restarted CustoMax.
- ù The CustoMax Window Background will be changed immediately after a Selection has been made.
- ù The Language will be changed immediately after a Selection has been made.
- ù Options relating to the type of monitor selected will be changed immediately after a Selection has been made.
- ù The displayed information cannot be manipulated in the area of display.



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### GETTING STARTED

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### HOW TO USE THE ON SCREEN DISPLAY

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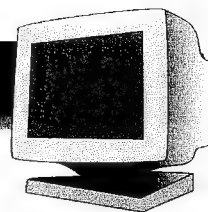
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## INTRODUCTION AND SAFETY



### Introduction

The Philips Brilliance 109 color monitor displays sharp and brilliant images of text and graphics with a maximum resolution of 1600x1200 pixels. It is optimal for Windows, CAD / CAM / CAE, desktop publishing, spread sheets, multi-media, and any other application that demands a large screen size and high resolutions.

The monitor automatically scans horizontal frequencies from 30KHz to 95KHz, and vertical frequencies from 50Hz to 160Hz. With microprocessor-based digital-controlled circuitry and On-Screen Display (OSD) controls, the monitor can automatically adjust itself to the video card's scanning frequency and displays an image with the precise parameters you desire.

### Features

- An anti-glare, anti-static, and anti-reflection high-contrast screen coating eliminates any bad effects caused by room light reflecting on and dust attracted to the screen's surface.
- With the Color Adjustment feature, you can easily choose different preset color temperatures or set your own customized color parameters.
- The Image Tilt Adjustment feature corrects a rotated image. This correction minimizes the distortions caused by elements such as the Earth's magnetic field.
- The full-size feature expands the image on the monitor to fill the screen when used in factory preset modes.

- USB Bay at back of monitor is prepared for the Universal Serial Bus hub. You can easily and flexibly connect USB-designed devices – such as a mouse or keyboard – to the monitor for true Plug-and-Play function. USB hub shipped separately.

- Green Design – including automatic power saving function (NUTEK) and low-emission compliance (TCO '95) – shows your commitment to the environment.

- DDC1/DDC2B allows communication between the monitor and the PC for optimal video configuration.

- The Power Factor Correction feature improves the power factor and results in higher power-consumption efficiency.

- Moire Cancellation eliminates diffraction, a fringe pattern in the picture.

**Note:** Your monitor operates according to the VESA DDC level 1/2B. Only computers that support the same guidelines and operate at the same or a higher level can make use of this feature. If your computer does not support the relevant guidelines, you can still use your monitor and computer. However, you may need to manually specify the appropriate resolution in the computer.

As an Energy Star Partner, Philips has determined that this product meets the Energy Star guidelines for energy efficiency.



Contact us at our web site: <http://www.monitors.be.philips.com>

### Safety precautions and maintenance

- Unplug the monitor, if you are not going to use it for an extended period of time.
- Unplug the monitor, if you need to clean it with a slightly damp cloth. Wiping the screen with a dry cloth is okay when the power is off. However, never use alcohol or ammonia-based liquids.
- Consult a service technician if the monitor does not operate normally when following the instructions in this manual.
- The back cover should be removed only by qualified service personnel.
- Keep the monitor out of direct sunlight and away from stoves or any other heat source.
- The top of the monitor is not a shelf. Remove any object that could fall into the vents or prevent proper cooling of the monitor's electronics.

- Keep the monitor dry. To avoid electric shock, do not expose it to rain or excessive moisture.

- Keep the monitor away from magnetic objects, such as speakers, electric motors, transformers, etc.

- When positioning the monitor, make sure the power plug and outlet are easily accessible.

### End-of-life disposal

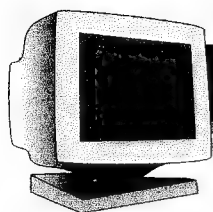
Your new monitor contains materials that can be recycled and reused. Specialized companies can recycle your product to increase the amount of reusable materials and to minimize the amount to be disposed of.

Please find out about the local regulations on how to dispose of your old monitor.

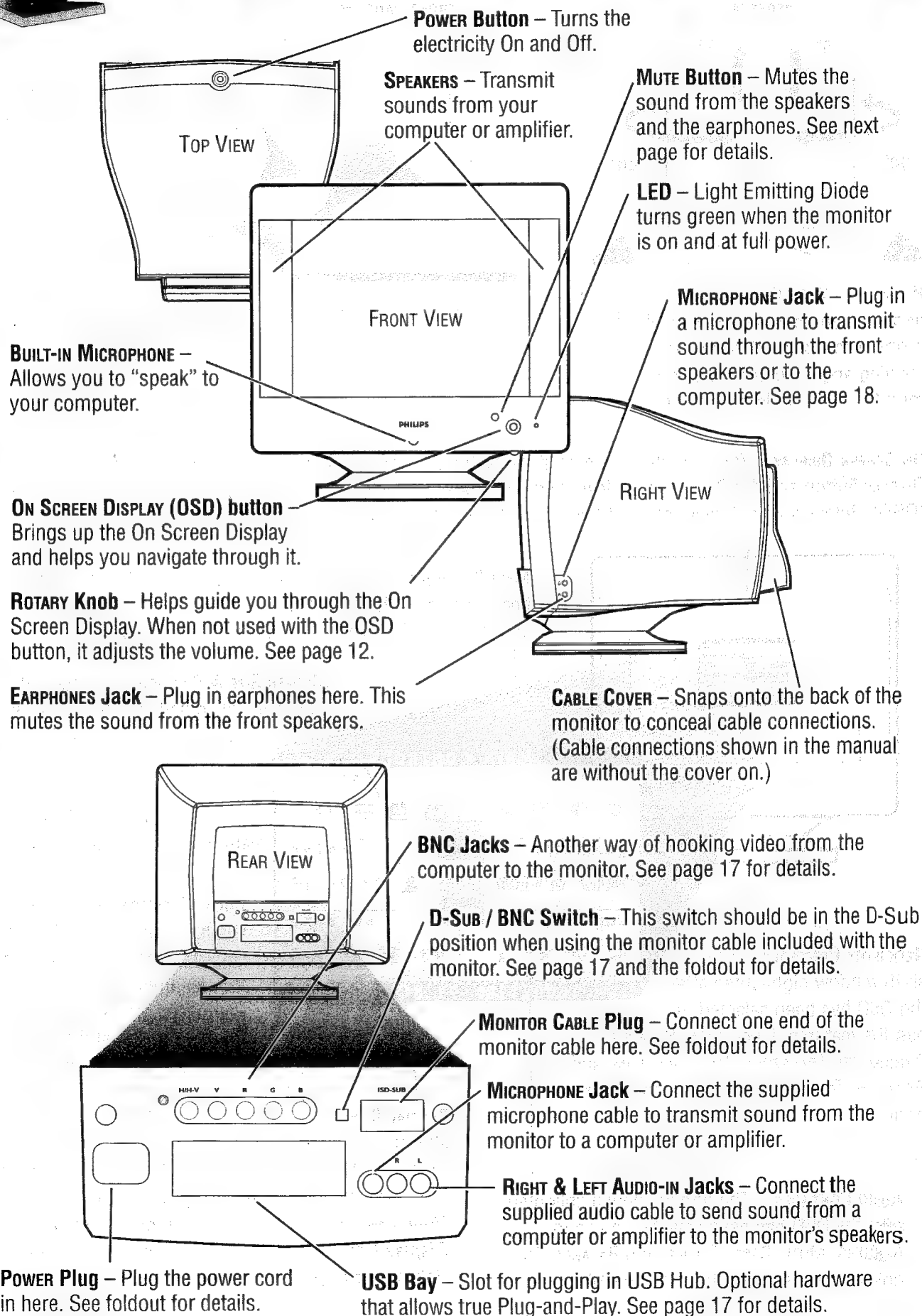
ENERGY STAR is a U.S. registered mark.

IBM, IBM PC, and Power PC are registered trademarks of International Business Machines Corporation.  
Apple, Macintosh, Quadra, Performa, and Centris are registered trademarks of Apple Computer, Inc.

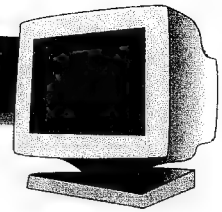




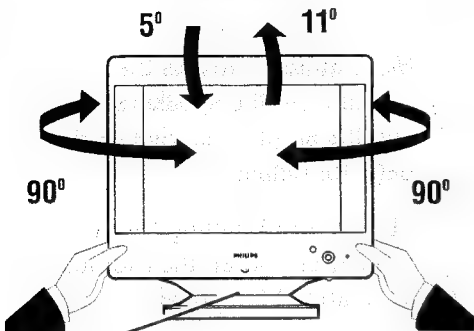
## DESCRIPTION OF CONTROLS



## DESCRIPTION OF CONTROLS

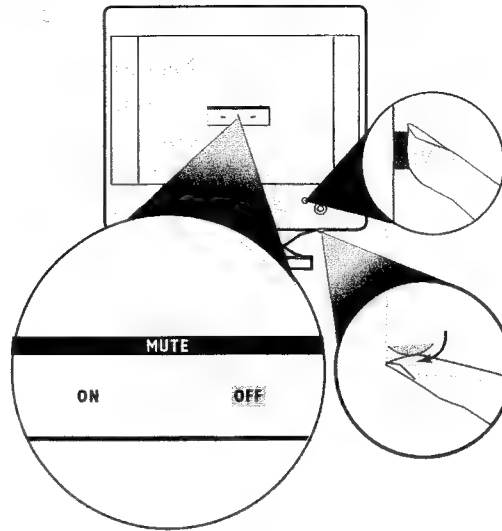


### PEDESTAL



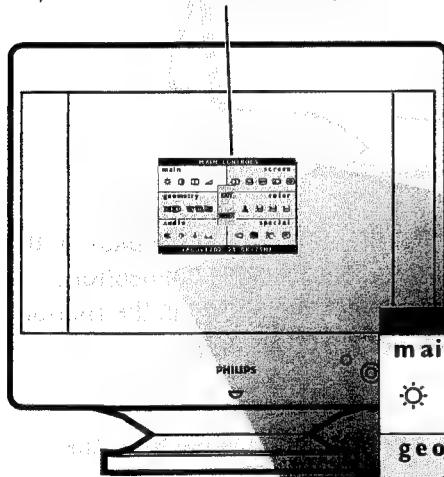
**PEDESTAL** – With the built-in pedestal, you can tilt and swivel the monitor to the most comfortable viewing angle. To best use your monitor, always place it at eye level.

### FRONT-PANEL MUTE BUTTON



**USING THE FRONT-PANEL MUTE BUTTON** – To turn the mute On and Off, first press the MUTE button. Next, turn the ROTARY knob to highlight either On or Off. Then, press the MUTE button again. *For another way to mute the sound, see page 14.*

**ON SCREEN DISPLAY** – Your monitor is preset at the factory. However, you can adjust it using the ON SCREEN DISPLAY button and the ROTARY knob described on page 2. The way to do so is through the On Screen Display (OSD). Below is a brief description of the six On Screen Display windows.



**MAIN CONTROLS** – The first window highlighted after the OSD has been selected. It has four features: BRIGHTNESS, CONTRAST, DEGAUSS, and VOLUME. To adjust these features, turn to pages 4 - 5.

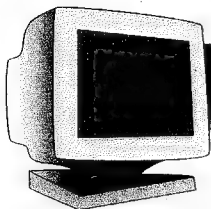
**SCREEN SIZE & POSITION** – The second window highlighted after the OSD has been selected. It has five features: FULL SIZE, HORIZONTAL POSITION, HORIZONTAL SIZE, VERTICAL POSITION, and VERTICAL SIZE. To adjust these features, turn to pages 6 - 8.

**COLOR TEMPERATURE** – The third window highlighted after the OSD has been selected. It has four features: CAD/CAM, DTP, PHOTO RETOUCH, and USER PRESETS. To adjust these features, turn to pages 8 - 9.

**GEOMETRY CONTROLS** – The sixth window highlighted after the OSD has been selected. It has five features: PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, and ROTATION. To adjust these features, turn to page 15.

**AUDIO CONTROLS** – The fifth window highlighted after the OSD has been selected. It has four features: MUTE, BASS, TREBLE, and BALANCE. To adjust these features, turn to page 14.

**SPECIAL CONTROLS** – The fourth window highlighted after the OSD has been selected. It has four features: LANGUAGE, ADVANCED CONTROLS, OSD CONTROLS, and VIDEO INPUT. To adjust these features, turn to pages 10 - 13. *Note: LANGUAGE allows you to change the On Screen Display from English to French, Spanish, German, or Italian. See page 10 for details.*

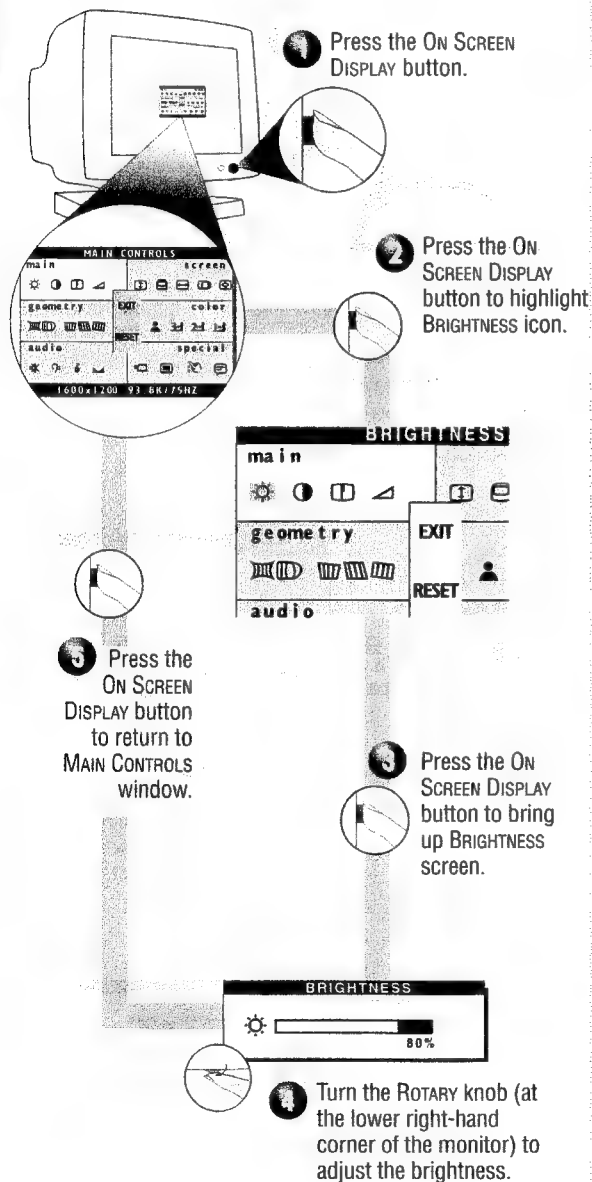


## HOW TO USE THE ON SCREEN DISPLAY (OSD)

### MAIN CONTROLS WINDOW

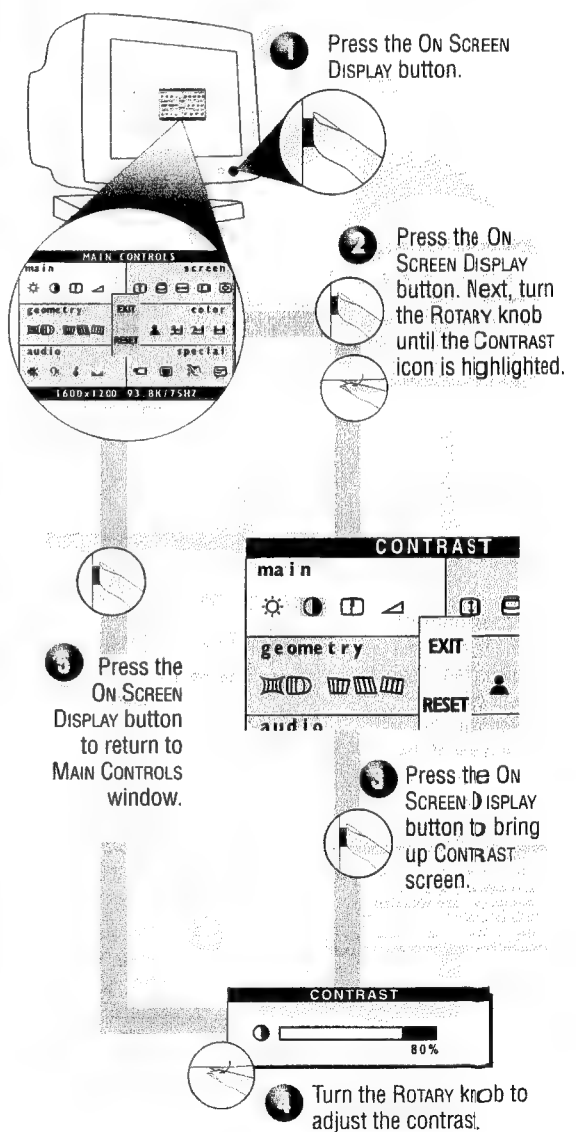
#### BRIGHTNESS

To adjust your screen's brightness, follow the steps below. Brightness is the overall intensity of the light coming from the screen. A 50% brightness level is recommended.



#### CONTRAST

**1** To adjust your screen's contrast, follow the steps below. Contrast is the difference between the light and dark areas on the screen. A 100% contrast level is recommended.



#### SMART HELP

##### After returning to MAIN CONTROLS ...

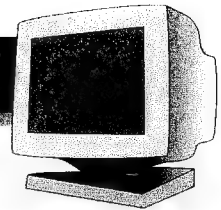
... to continue to CONTRAST, turn the ROTARY knob until CONTRAST icon is highlighted. Next, follow steps 3 - 5 under CONTRAST.  
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

#### SMART HELP

##### After returning to MAIN CONTROLS ...

... to continue to DEGAUSS, turn the ROTARY knob until DEGAUSS icon is highlighted. Next, follow steps 3 - 4 under DEGAUSS (on the next page).  
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

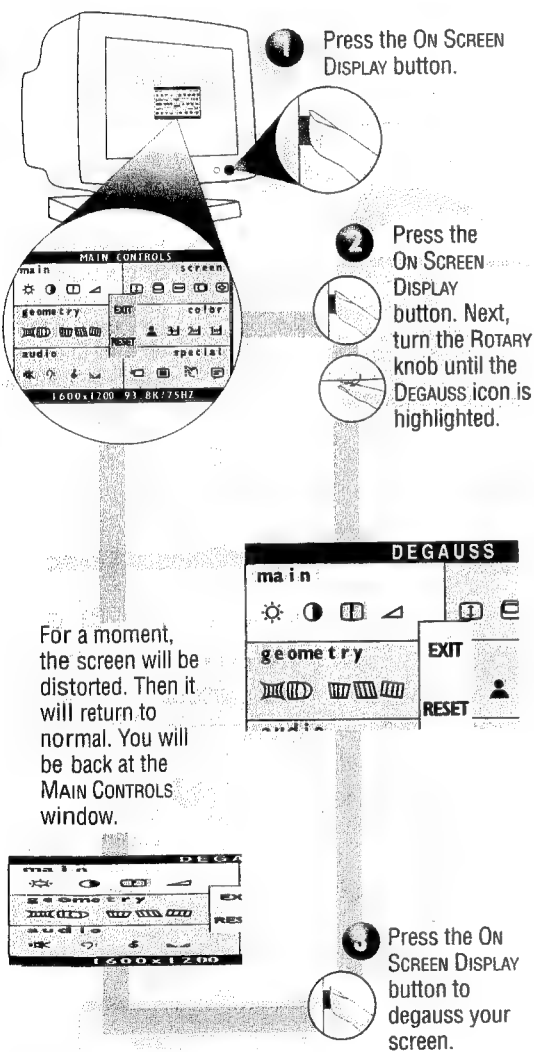
# HOW TO USE THE ON SCREEN DISPLAY (OSD)



## MAIN CONTROLS WINDOW

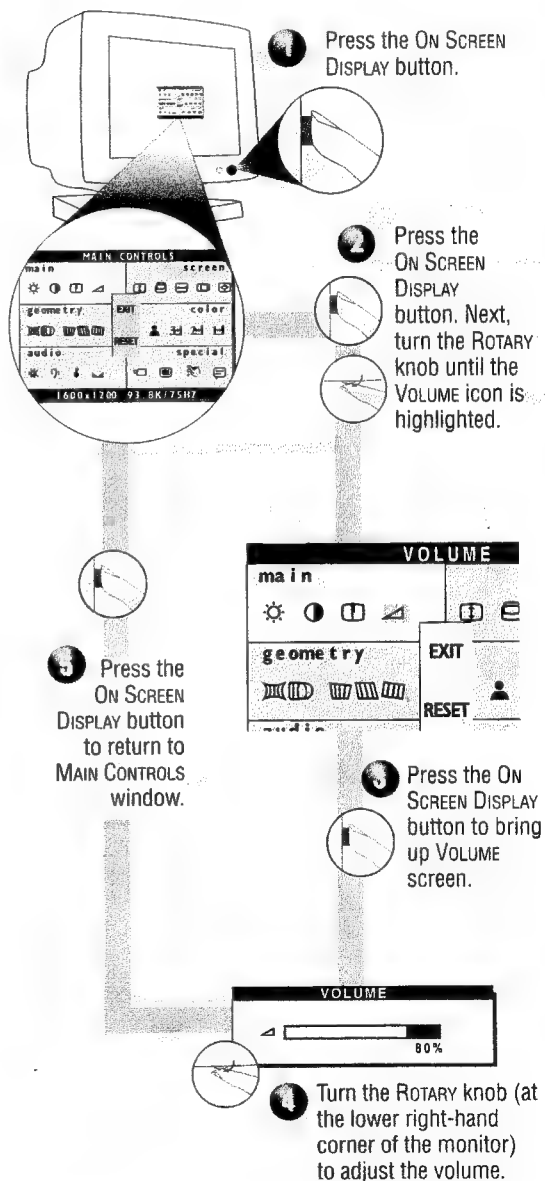
### DEGAUSS

**1** To degauss your screen, follow the steps below. Degaussing removes electromagnetic build up that may distort the color on your screen.



### VOLUME

**1** To adjust your monitor's volume, follow the steps below. The volume control adjusts the sound from the two front-mounted speakers or the earphones jack.



### SMART HELP

#### After returning to MAIN CONTROLS...

... to continue to VOLUME, turn the ROTARY knob until VOLUME icon is highlighted. Next, follow steps 3 - 5 under VOLUME.

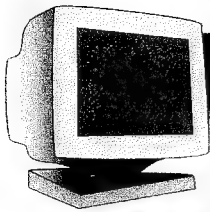
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

### SMART HELP

#### After returning to MAIN CONTROLS...

... to continue to the SCREEN SIZE & POSITION window, turn the ROTARY knob until EXIT is highlighted. Next, press the OSD button. Turn to the next page and follow steps 2 - 5 under FULL SIZE.


... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

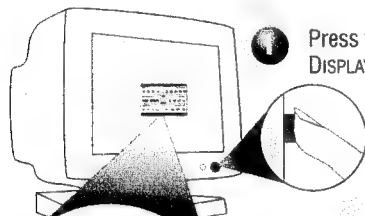


# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## SCREEN SIZE & POSITION WINDOW

### FULL SIZE

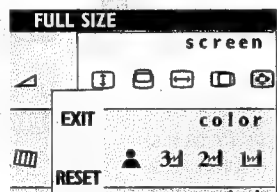
 Full Size allows you to adjust the image on your screen to its maximum height and width. If nothing happens when you use this feature, the image is already at full size. You can use Full Size to both enable and disable this feature. *Note: Full Size only works with the monitor's factory presets.*



1 Press the On Screen Display button.

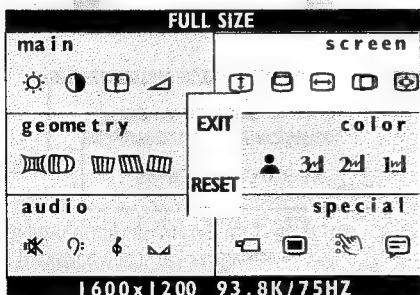


2 Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the On Screen Display button. The FULL SIZE icon is highlighted.



The image will automatically adjust to full size. You can now go on to your next adjustment.

3 Press the On Screen Display button.




### SMART HELP

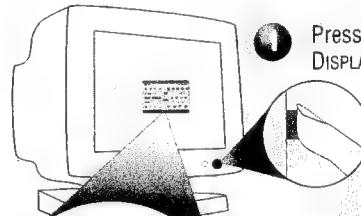
#### After returning to SCREEN SIZE & POSITION ...

... to continue to HORIZONTAL POSITION, turn the ROTARY knob until HORIZONTAL POSITION is highlighted. Next, follow steps 3 - 5 under HORIZONTAL POSITION.

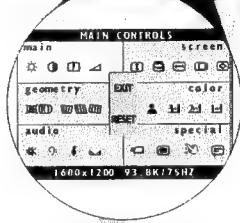
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

### HORIZONTAL POSITION

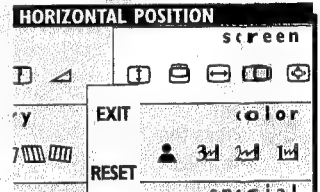
 Horizontal Position shifts the image on your screen either to the left or right. Use this feature if your image does not appear centered.



1 Press the On Screen Display button.



2 Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until HORIZONTAL POSITION is highlighted.



3 Press the On Screen Display button to return to SCREEN SIZE & POSITION.

3 Press the On Screen Display button to bring up HORIZONTAL Position screen.



4 Turn the ROTARY (at the lower right-hand corner of the monitor) knob until the image is horizontally balanced.

### SMART HELP

#### After returning to SCREEN SIZE & POSITION ...

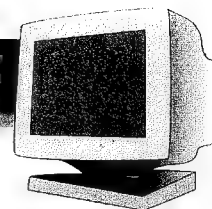
... to continue to HORIZONTAL SIZE, turn the ROTARY knob until HORIZONTAL SIZE is highlighted. Next, follow steps 3 - 5 under HORIZONTAL SIZE (on the next page).

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)



# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## SCREEN SIZE & POSITION WINDOW



### HORIZONTAL SIZE

Horizontal Size expands or contracts the image on your screen, pushing it out toward the left and right sides or pulling it in toward the center.

- 1 Press the ON SCREEN DISPLAY button.
- 2 Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the ON SCREEN DISPLAY button. Then, turn the ROTARY knob until HORIZONTAL Size is highlighted.
- 3 Press the ON SCREEN DISPLAY button to return to SCREEN SIZE & POSITION.
- 4 Press the On SCREEN DISPLAY button to bring up HORIZONTAL Size screen.
- 5 Turn the ROTARY knob (at the lower right-hand corner of the monitor) until the image is the horizontal size you want.

### VERTICAL POSITION VERTICAL SIZE

Vertical Position adjusts the image on your screen either up or down. Use this feature if your image does not appear centered. Vertical Size expands or contracts the image on your screen, pushing it out toward the top and bottom sides or pulling it in toward the center.

- 1 Press the ON SCREEN DISPLAY button.
- 2 Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the ON SCREEN DISPLAY button. Then, turn the ROTARY knob until VERTICAL POSITION or VERTICAL Size is highlighted.
- 3 Press the ON SCREEN DISPLAY button to return to SCREEN SIZE & POSITION.
- 4 Press the On SCREEN DISPLAY button to bring up VERTICAL POSITION or VERTICAL Size screen.
- 5 Turn the ROTARY knob until the image is vertically balanced or the vertical size you want.

### SMART HELP

#### After returning to SCREEN SIZE & POSITION ...

... to continue to VERTICAL POSITION, turn the ROTARY knob until VERTICAL Position is highlighted. Next, follow steps 3 - 5 under VERTICAL POSITION.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

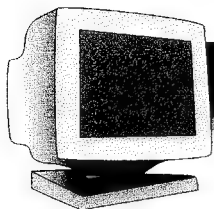
### SMART HELP

#### After returning to SCREEN SIZE & POSITION ...

... to continue to GEOMETRY WINDOW, turn the ROTARY knob until Exit is highlighted. Next, press the OSD button. Then follow steps 2a - 2c under GEOMETRY WINDOW on the next page.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)





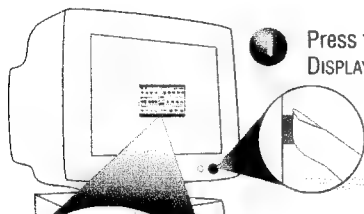
# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## COLOR TEMPERATURE WINDOW

**9300 K CAD/CAM / 6500 K DTP  
5500 K PHOTO RETOUCH**



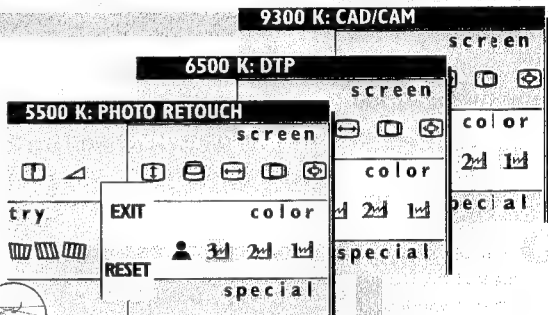
Your monitor has three preset options you can choose from. One **1** for Computer Aided Design (CAD) work. Two **2** for Desktop Publishing (DTP). And three **3** for Photo Retouch. When you select an option, the computer automatically adjusts itself for that selection.



**1** Press the On SCREEN DISPLAY button.

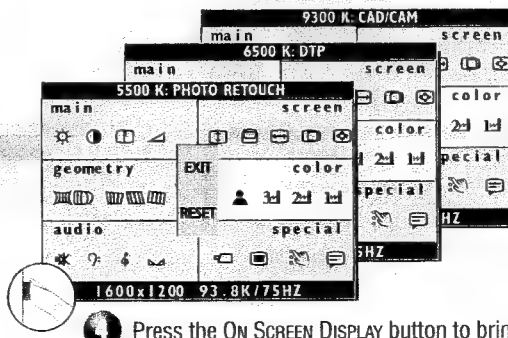


**2** Turn the ROTARY knob until the COLOR window is highlighted. Then press the On SCREEN DISPLAY button.



**3** Turn the ROTARY knob until CAD/CAM, DTP, OR PHOTO RETOUCH is highlighted.

After each preset setting is saved, the on screen display automatically returns to the COLOR TEMPERATURE window. To save the next present setting, simply repeat the steps listed here.



**4** Press the On SCREEN DISPLAY button to bring up and save the preset settings for 9300 K CAD/CAM, 6500 K DTP, or 5500 K PHOTO RETOUCH.

### SMART HELP

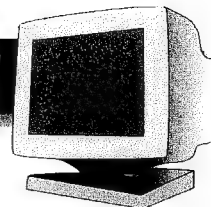
#### After returning to COLOR TEMPERATURE ...

... to continue to USER PRESETS, turn the ROTARY knob until USER PRESETS is highlighted. Next, follow steps 3 - 9 under USER PRESETS on the next page.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

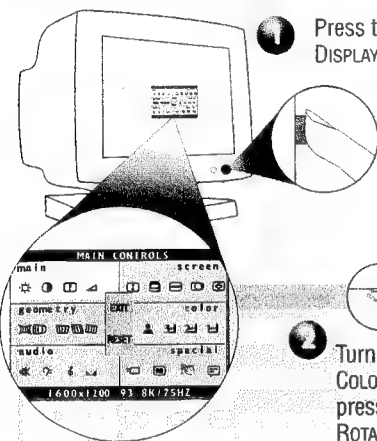
# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## COLOR TEMPERATURE WINDOW



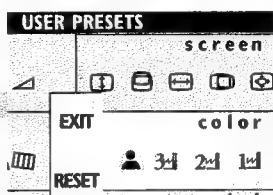
### USER PRESETS

If you need to adjust any of the three preset options (CAD/CAM, DTP, or PHOTO RETOUCH), follow the steps below to modify the colors that appear on your screen. You can make individual adjustments to each of the preset options.



1 Press the On Screen Display button.

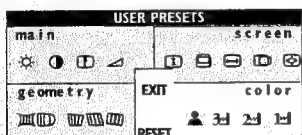
2 Turn the ROTARY knob until the COLOR window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until USER PRESETS icon is highlighted.



3 Press the On Screen Display button to bring up the User PRESETS window.



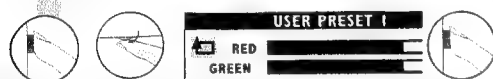
4 You will now be back at the User PRESETS window. See SMART HELP below for options.



5 If necessary, turn the ROTARY knob until 1 of the User PRESETS is highlighted. Next, press the On Screen Display button.



6 To exit User PRESET 1, press the On Screen Display button. Next, turn the ROTARY knob until the EXIT box is highlighted. Then, press the On Screen Display button.



7 When done with green, press the On Screen Display button. BLUE will be highlighted.



8 When done with red, press the On Screen Display button. GREEN will be highlighted.



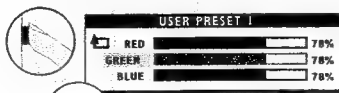
9 First, press the On Screen Display button. RED will be highlighted.



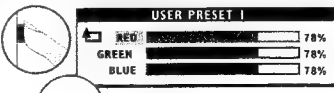
To adjust the blue, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the blue.



To adjust the green, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the green.



Next, to adjust the red, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the red.



### SMART HELP

#### USER PRESETS

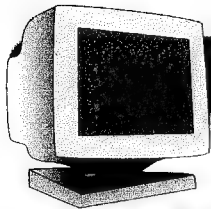
GO BACK

1 2

To exit USER PRESETS (step 3 above), turn the ROTARY knob until the Go Back icon is highlighted. Go BACK appears by the icon when highlighted. Next, press the On Screen Display button. You will be back at the COLOR TEMPERATURE window.

#### After returning to COLOR TEMPERATURE

- ... to continue to USER PRESET 2 OR 3, repeat steps 3 through 8, selecting either User PRESET 2 or User PRESET 3.
- ... to continue to SPECIAL CONTROLS window, turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Now, follow steps 2 - 5 under SPECIAL CONTROLS on the next page.
- ... to exit the On Screen Display completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)



# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## SPECIAL CONTROLS WINDOW

### LANGUAGE

The ON SCREEN DISPLAY shows its settings in one of five languages. The default is English, but you can select French, Spanish, German, or Italian.

- 1 Press the On Screen Display button.
- 2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Then, press the On Screen Display button to highlight LANGUAGE icon.
- 3 Press the On Screen Display button to confirm your selection and return to SPECIAL CONTROLS.
- 4 Press the On Screen Display button to bring up LANGUAGE screen.
- 5 Turn the ROTARY knob (at the lower right-hand corner of the monitor) until desired language is selected.

### SMART HELP

#### After returning to SPECIAL CONTROLS ...

... to continue to **ADVANCED CONTROLS**, turn the ROTARY knob until **ADVANCED CONTROLS** icon is highlighted. Next, follow steps 3 - 6 under **ADVANCED CONTROLS**.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

### ADVANCED CONTROLS CORNER CORRECTION

**ADVANCED CONTROLS** is a set of five adjustments. They include **CORNER CORRECTION**, **VERTICAL LINEARITY**, **MOIRE**, **ROTARY DEFAULT**, and **POWER SAVING**. **CORNER CORRECTION** "squares up" the corners of an image on the screen. To adjust your **CORNER CORRECTION**, follow the steps below.

- 1 Press the On Screen Display button.
- 2 Turn the ROTARY knob until **SPECIAL CONTROLS** is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the **ADVANCED CONTROLS** icon is highlighted.
- 3 Press the On Screen Display button to bring up **ADVANCED CONTROLS** screen.
- 4 Press the On Screen Display button to bring up **ADVANCED CONTROLS** screen.
- 5 Turn the ROTARY knob until desired corner correction is selected.
- 6 Press the On Screen Display button to bring up **ADVANCED CONTROLS** screen.
- 7 If necessary, turn the ROTARY knob until **CORNER CORRECTION** is highlighted. Then, press the On Screen Display button.

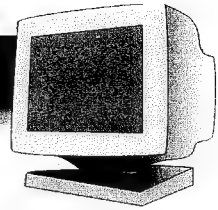
### SMART HELP

#### After returning to ADVANCED CONTROLS ...

... to continue to **VERTICAL LINEARITY**, turn the ROTARY knob until **VERTICAL LINEARITY** icon is highlighted. Next, follow steps 4 - 6 under **VERTICAL LINEARITY** (on the next page).

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

# HOW TO USE THE ON SCREEN DISPLAY (OSD)



## SPECIAL CONTROLS WINDOW

### ADVANCED CONTROLS VERTICAL LINEARITY

**ADVANCED CONTROLS** is a set of five adjustments, including **VERTICAL LINEARITY**. Linearity is the degree with which the actual location of a pixel on the screen corresponds with its intended location. To adjust your **VERTICAL LINEARITY**, follow the steps below.

- Press the **ON SCREEN DISPLAY** button.
- Turn the **ROTARY** knob until **SPECIAL CONTROLS** is highlighted. Next, press the **ON SCREEN DISPLAY** button. Then, turn the **ROTARY** knob until the **ADVANCED CONTROLS** icon is highlighted.
- Press the **ON SCREEN DISPLAY** button to add your adjustment and to bring up **ADVANCED CONTROLS** screen.
- Press the **ON SCREEN DISPLAY** button to bring up **ADVANCED CONTROLS** screen.
- Turn the **ROTARY** knob to adjust the vertical linearity.
- Turn the **ROTARY** knob until **VERTICAL LINEARITY** is highlighted. Then, press the **ON SCREEN DISPLAY** button.

### ADVANCED CONTROLS MOIRE

**ADVANCED CONTROLS** is a set of five adjustments, including **MOIRE**. **MOIRE** is a fringe pattern arising from the interference between two superimposed line patterns. To adjust your **MOIRE**, follow the steps below. *Note: Use only if necessary. By activating **MOIRE**, sharpness can be affected.*

- Press the **ON SCREEN DISPLAY** button.
- Turn the **ROTARY** knob until **SPECIAL CONTROLS** is highlighted. Next, press the **ON SCREEN DISPLAY** button. Then, turn the **ROTARY** knob until the **ADVANCED CONTROLS** icon is highlighted.
- Press the **ON SCREEN DISPLAY** button to add your adjustment and to bring up **ADVANCED CONTROLS** screen. See **SMART HELP** to select **VERTICAL MOIRE** or turn **MOIRE** Off.
- Turn the **ROTARY** knob to adjust the moire.
- Press the **ON SCREEN DISPLAY** button to bring up **ADVANCED CONTROLS** screen.
- Turn the **ROTARY** knob until **MOIRE** is highlighted. Then, press the **ON SCREEN DISPLAY** button.

#### SMART HELP

##### After returning to **ADVANCED CONTROLS**...

... to continue to **MOIRE**, turn the **ROTARY** knob until **MOIRE** icon is highlighted. Next, follow steps 4 - 7 under **MOIRE**.

... to exit completely, press the **OSD** button and hold for two seconds. (See page 16 for other exit options.)

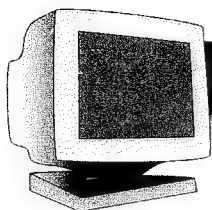
#### SMART HELP

To select **VERTICAL MOIRE** or to turn **Moire** off, follow the steps above, selecting **VERTICAL MOIRE** or **Moire** off in step 5.

##### After returning to **ADVANCED CONTROLS**...

... to continue to **ROTARY DEFAULT**, turn the **ROTARY** knob until **ROTARY DEFAULT** icon is highlighted. Next, follow steps 4 - 6 under **ROTARY DEFAULT**. ... to exit completely, press the **OSD** button and hold for two seconds. (See page 16 for other exit options.)



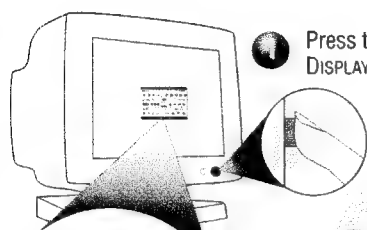


# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## SPECIAL CONTROLS WINDOW

### ADVANCED CONTROLS ROTARY DEFAULT

ROTARY DEFAULT allows you to pick the feature your ROTARY knob will default to when not used in adjusting your ON SCREEN DISPLAY. The normal default is volume. To select your ROTARY DEFAULT, follow the steps below.

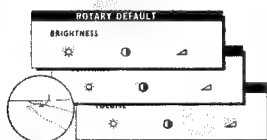


1 Press the ON SCREEN DISPLAY button.

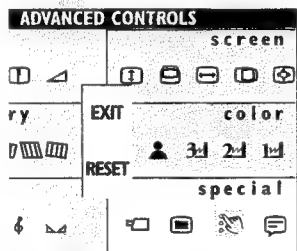


2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the ON SCREEN DISPLAY button. Then, turn the ROTARY knob until the ADVANCED CONTROLS icon is highlighted.

3 Press the ON SCREEN DISPLAY button to add your adjustment and return to ADVANCED CONTROLS.



4 Turn the ROTARY knob to select BRIGHTNESS, CONTRAST, or VOLUME.



5 Press the ON SCREEN DISPLAY button to bring up ADVANCED CONTROLS screen.



6 Turn the ROTARY knob until ROTARY DEFAULT is highlighted. Then, press the ON SCREEN DISPLAY button.

### SMART HELP

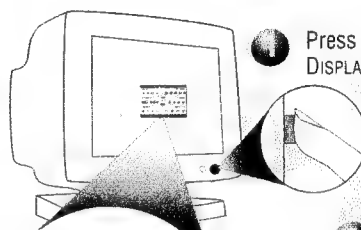
#### After returning to ADVANCED CONTROLS ...

... to continue to POWER SAVING, turn the ROTARY knob until POWER SAVING is highlighted. Next, follow steps 3 - 6 under POWER SAVING.

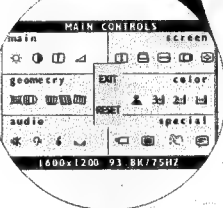
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

### ADVANCED CONTROLS POWER SAVING

POWER SAVING helps save energy when the monitor is on but not being used. After a preset time, the monitor will go blank if not being used. To select POWER SAVING, follow the steps below.

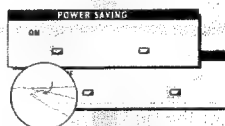


1 Press the ON SCREEN DISPLAY button.

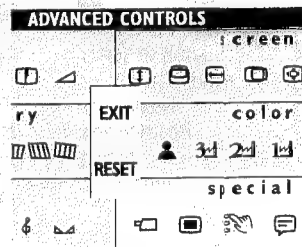


2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the ON SCREEN DISPLAY button. Then, turn the ROTARY knob until the ADVANCED CONTROLS icon is highlighted.

3 Press the ON SCREEN DISPLAY button to add your adjustment and return to ADVANCED CONTROLS.



4 Turn the ROTARY knob to select POWER SAVING ON or OFF.



5 Press the ON SCREEN DISPLAY button to bring up ADVANCED CONTROLS screen.



6 Turn the ROTARY knob until POWER SAVING is highlighted. Then, press the ON SCREEN DISPLAY button.

### SMART HELP

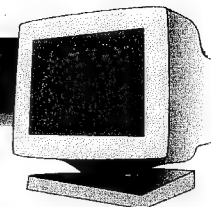
#### After returning to ADVANCED CONTROLS ...

... to continue to OSD CONTROLS, turn the ROTARY knob until Go Back is highlighted. Next, press the ON SCREEN DISPLAY button. Then, turn the ROTARY knob to OSD CONTROLS and go to the next page.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## SPECIAL CONTROLS WINDOW



### OSD CONTROLS

WITH OSD CONTROLS, you can set the time for the On Screen Display to time out, and change the vertical and horizontal position of the OSD on the monitor screen.

- 1 Press the On Screen Display button.
- 2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the OSD CONTROLS icon is highlighted.
- 3 Turn the ROTARY knob to select either VERTICAL or HORIZONTAL Position and repeat steps 3 - 6.
- 4 Press the On Screen Display button to add your change and return to OSD CONTROLS.
- 5 Press the On Screen Display button to bring up OSD CONTROLS screen.
- 6 Press the On Screen Display button to bring up TIMER screen.
- 7 Turn the ROTARY knob to select 05, 10, 25 seconds, or OFF.

### SMART HELP

#### After returning to SPECIAL CONTROLS ...

... to continue to OSD CONTROLS, turn the ROTARY knob until OSD CONTROLS icon is highlighted. Then, follow steps 3 - 6 under OSD CONTROLS.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

### VIDEO INPUT

VIDEO INPUT helps determine what you see on the screen. It is set at 0.7V(olts), but if the video input signal is different than the output signal, you may want to change it to 1.0V.

- 1 Press the On Screen Display button.
- 2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until the VIDEO INPUT icon is highlighted.
- 3 Press the On Screen Display button to save your selection and return to SPECIAL CONTROLS.
- 4 Press the On Screen Display button. The VIDEO INPUT screen appears.
- 5 Turn the ROTARY knob to select either 0.7V or 1.0V.

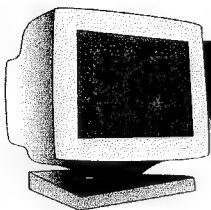
### SMART HELP

#### After returning to OSD CONTROLS ...

to continue to AUDIO CONTROLS, turn the ROTARY knob until GO BACK is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob to AUDIO CONTROLS window and go to the next page.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)





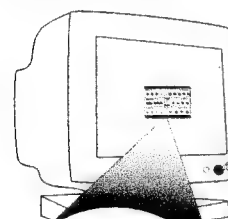
# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## AUDIO CONTROLS WINDOW

### MUTE, BASS, TREBLE, BALANCE



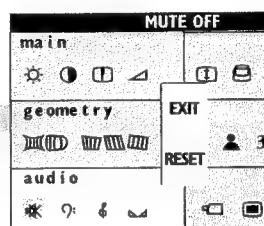
Follow the steps below to modify the sound that comes from your speakers. You can make individual adjustments to each of the preset options (MUTE, BASS, TREBLE, or BALANCE).



**1** Press the On Screen Display button.



**2a** Turn the ROTARY knob until the AUDIO CONTROLS window is highlighted. Next, press the On Screen Display button. Then, if necessary, turn the ROTARY knob until MUTE icon is highlighted. If you have sound, MUTE OFF appears at the top of the on screen display.



**2b** Press the On Screen Display button to mute the sound from your speakers and to return to AUDIO CONTROLS window. MUTE ON appears at the top of the on screen display.

MUTE ON

**3c** When done, press the On Screen Display button to save the change and return the screen to AUDIO CONTROLS.

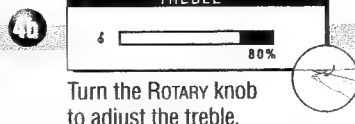


**3b** Turn the ROTARY knob to adjust the balance.



**3a** To select BALANCE, turn the ROTARY knob until BALANCE icon is highlighted. Then, press the On Screen Display button.

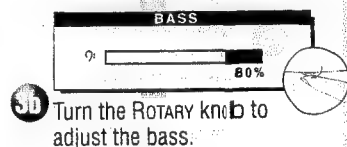
**4c** When done, press the On Screen Display button to save the change and return the screen to AUDIO CONTROLS.



**4b** Turn the ROTARY knob to adjust the treble.

**4a** To select TREBLE, turn the ROTARY knob until TREBLE icon is highlighted. Next, press the On Screen Display button.

**3c** When done, press the On Screen Display button to save the change and return the screen to AUDIO CONTROLS.



**3b** Turn the ROTARY knob to adjust the bass.

### SMART HELP

To exit Audio Controls ...

... but continue on to GEOMETRY CONTROLS, turn the ROTARY knob until EXIT is highlighted. Next, press the On Screen Display button. Then go to step 2a on page 15.

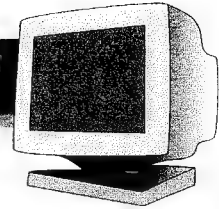
... completely, press the On Screen Display button and hold for two seconds. The On Screen Display will disappear. All change will be saved.

To cancel Mute, repeat step 2b, or press the Mute button on the front of the monitor.

To make changes to one item, follow the steps for that item. Then follow the instructions To exit Audio Controls ....

# HOW TO USE THE ON SCREEN DISPLAY (OSD)

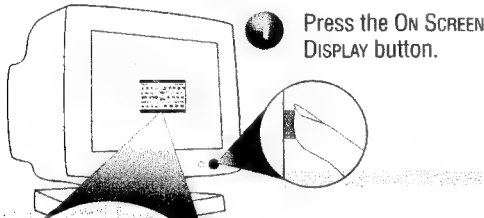
## GEOMETRY CONTROLS WINDOW



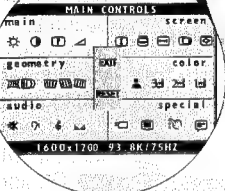
### PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, ROTATION



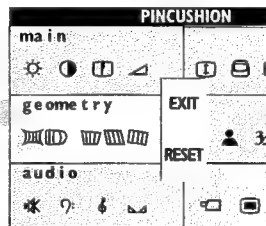
Follow the steps below to adjust any of the five preset options (PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, or ROTATION). You can make individual adjustments to each of the preset options. *Note: use these features only when the picture is not square.*



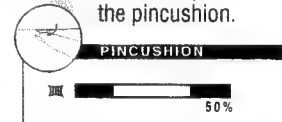
1 Press the On Screen Display button.



2a Turn the ROTARY knob until the GEOMETRY CONTROLS window is highlighted. Next, press the On Screen Display button. Then, if necessary, turn the ROTARY knob until PINCUSHION icon is highlighted.



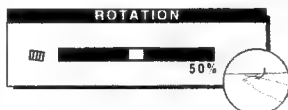
2b Press the On Screen Display button. Then, turn the ROTARY knob to adjust the pincushion.



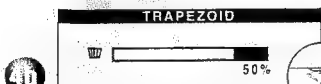
2c When done, press the On Screen Display button to save the change and return to GEOMETRY CONTROLS window.

3a To select BALANCED PINCUSHION, turn the ROTARY knob until BALANCED PINCUSHION is highlighted. Next, press the On Screen Display button.

3a To select PARALLELOGRAM or ROTATION, turn the ROTARY knob until PARALLELOGRAM or ROTATION icon is highlighted.  
3b Next, press the On Screen Display button. Then follow steps 4b and 4c to make the appropriate changes.



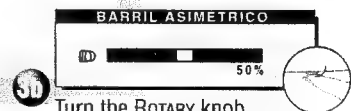
4c When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY CONTROLS window.



4b Turn the ROTARY knob to adjust the trapezoid.

4a To select TRAPEZOID, turn the ROTARY knob until TRAPEZOID icon is highlighted. Next, press the On Screen Display button.

5c When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY CONTROLS.



5b Turn the ROTARY knob (on the lower right-hand corner of the monitor) to adjust the balanced pincushion.

### SMART HELP

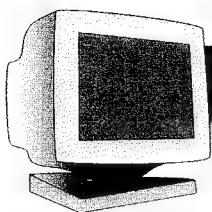
#### To exit GEOMETRY CONTROLS . . .

. . . but continue to another window, turn the ROTARY knob until EXIT is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until that window is highlighted. Now, press the On Screen Display button and follow the instructions for that window.

. . . completely, press the On Screen Display button and hold for two seconds. The On Screen Display will disappear. All changes will be saved.

To make changes to one item, follow the steps for that item. Then, follow "To exit GEOMETRY CONTROLS . . ."

To return to factory presets, see "To Reset an Individual Window" on page 16.



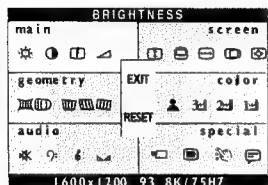
# HOW TO USE THE ON SCREEN DISPLAY (OSD)

## EXIT AND RESET

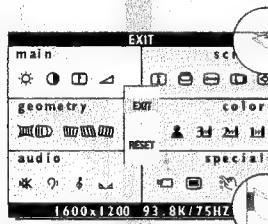
### EXIT & RESET FROM A WINDOW

Choosing EXIT allows you to go to another window. Choosing RESET returns all the settings in that window to factory presets.

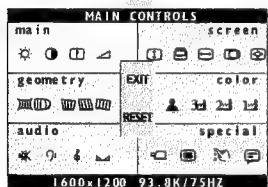
#### TO EXIT AN INDIVIDUAL WINDOW



- 1 Make sure you are at a window. For example, MAIN CONTROLS. An icon will be highlighted. For example, BRIGHTNESS.



- 2 Turn the ROTARY knob until EXIT is highlighted. Next, press the ON SCREEN DISPLAY button.

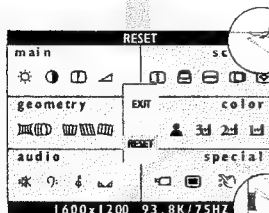


- 3 An entire window is now highlighted. Turn the ROTARY knob to another window and begin adjustments, or turn the knob until EXIT is highlighted as shown in EXIT FROM OSD (at right).

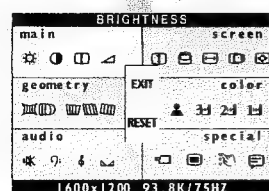
#### TO RESET AN INDIVIDUAL WINDOW



- 1 Make sure you are at a window. For example, MAIN CONTROLS. An icon will be highlighted. For example, BRIGHTNESS.



- 2 Turn the ROTARY knob until RESET is highlighted. Next, press the ON SCREEN DISPLAY button.

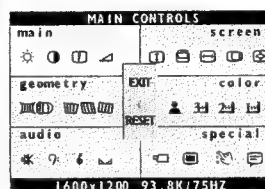


- 3 The first icon in the reset window is now highlighted. Turn the ROTARY knob to select another icon and begin adjustments, or turn the knob until EXIT is highlighted as shown above.

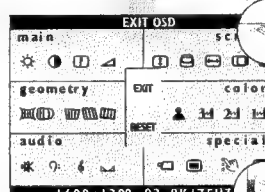
### EXIT & RESET FROM THE ON SCREEN DISPLAY

Exiting from the On Screen Display removes the On Screen Display from the monitor screen. Resetting from the On Screen Display returns everything in all the windows to factory presets.

#### TO EXIT AN ENTIRE ON SCREEN DISPLAY

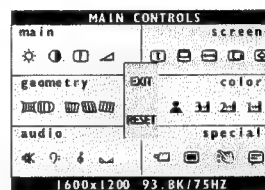


- 1 Make sure you have exited from all icons in a window. (See TO EXIT FROM AN INDIVIDUAL WINDOW.) For example, MAIN CONTROLS will be highlighted.

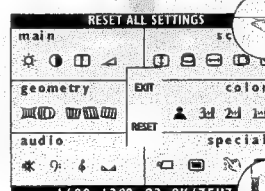


- 2 Turn the ROTARY knob until EXIT is highlighted. Next, press the ON SCREEN DISPLAY button. The On Screen Display will disappear.

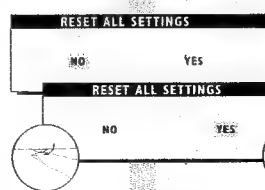
#### RESET ENTIRE ON SCREEN DISPLAY



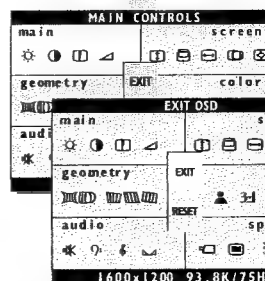
- 1 Make sure you have exited from all icons in a window. (See TO EXIT FROM AN INDIVIDUAL WINDOW.) For example, MAIN CONTROLS will be highlighted.



- 2 Turn the ROTARY knob until RESET is highlighted. Next, press the ON SCREEN DISPLAY button.



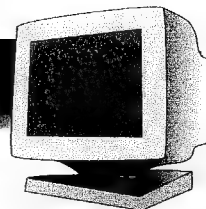
- 3 Turn the ROTARY knob to select NO or YES. Then press the ON SCREEN DISPLAY button.



- 4 If No is selected, the On Screen Display appears and MAIN CONTROLS is highlighted. If Yes is selected, the EXIT OSD screen appears.

## ADDITIONAL HOOK UP OPTIONS

### BNC AND USB SET UPS



#### BNC CONNECTIONS

BNC is another way to connect the monitor to the computer. This connection requires an optional BNC cable. It can be connected to either a Macintosh- or IBM-compatible computer. For those who work with graphics or designs, this option may be better.

**Note:** Be sure to flip the D-Sub/BNC switch to BNC when using this connection.

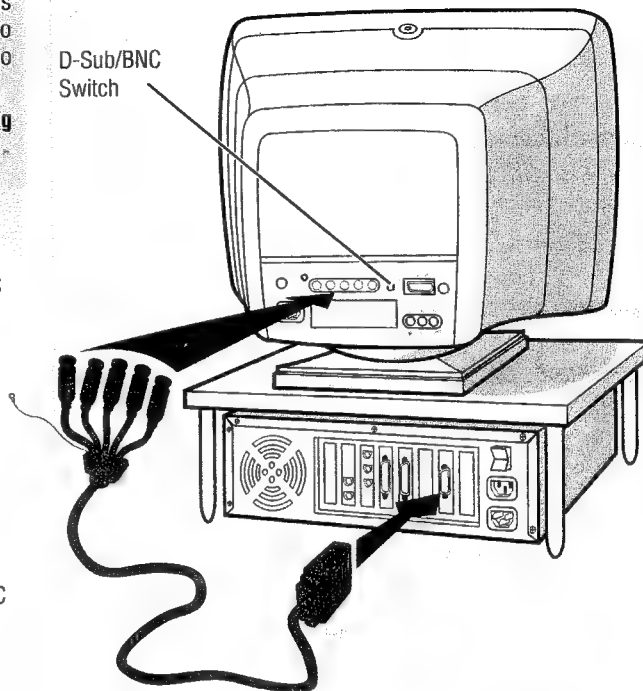
##### For an IBM-compatible computer:

1. Turn off the computer.
2. Connect the (optional) BNC monitor cable and set D-Sub/BNC switch to BNC.
3. Connect the power cable.
4. Turn on the monitor. Then turn on the computer.
5. If you have Windows '95, follow the "If you have Windows '95" steps on the Setting Up foldout sheet.

##### For a Macintosh-type computer:

1. Connect the Mac adapter to one end of the monitor cable.
2. Turn off the computer.
3. Connect the (optional) BNC monitor cable and set D-Sub/BNC switch to BNC.
4. Connect the power cable.
5. Turn on the monitor. Then turn on the computer.

D-Sub/BNC Switch



Refer to the "Setting Up your Philips monitor" foldout for a more detailed guide to setting up your monitor.

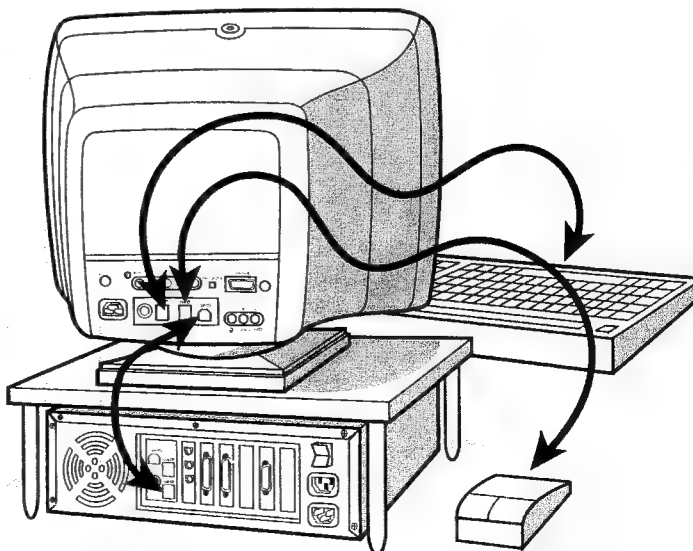
#### USB CONNECTIONS

USB (Universal Serial Bus) is an innovation in connecting your IBM-compatible computer to your monitor. By using the USB, you will be able to connect your keyboard, mouse, printer, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. Plus, you will have true plug-and-play capability. While the software is still being developed, Philips has included the hardware so you will be ready to take advantage of this next generation in computer development.

##### For an IBM-compatible Computer:

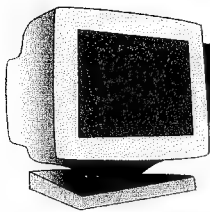
1. Turn off the computer.
2. Connect the (optional) USB Hub and cable to the computer and to the monitor. (Computer must have USB port.)
3. Connect the power cable.
4. Turn on the monitor. Then turn on the computer.
5. With the installation of the correct software, you will be able to connect specially-made peripherals to the monitor.

**Note:** USB Hub and cables sold separately. USB Bay exists in back of monitor.



Refer to the "Setting Up your Philips monitor" foldout for a more detailed guide to setting up your monitor.





## ADDITIONAL INFORMATION

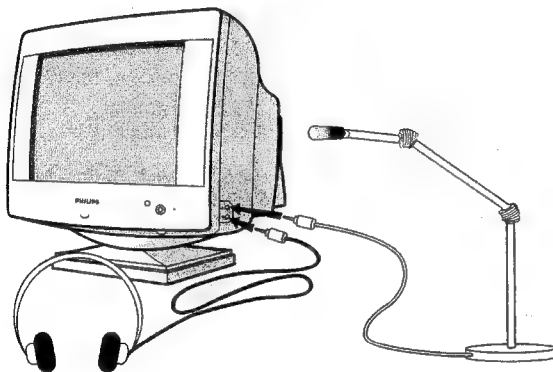
### AUDIO HOOK UPS AND POWER SAVING FEATURE

#### MICROPHONE AND EARPHONES JACKS

In addition to built-in speakers and microphone, you can connect this monitor to optional earphones and a microphone. The jacks are on the right side of the monitor.

To use the microphone with your computer or an amplifier, make the connections shown below.

**Note:** When the earphones are plugged in, there will be no sound from the built-in speakers.

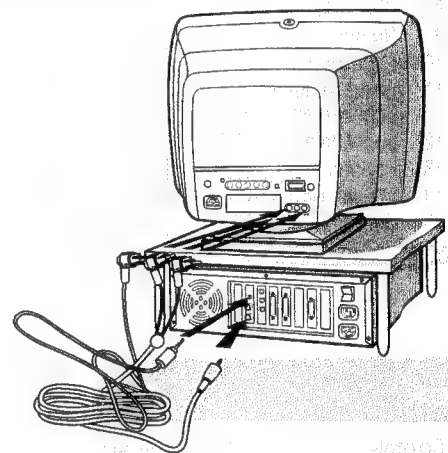


#### MICROPHONE AND AUDIO-IN JACKS

A microphone jack is on the back of the monitor. Use it and the supplied cable to connect your monitor to your computer or an amplifier (if either has the right type of jack).

On the back of this monitor there is also one set of left and right audio-in jacks. Use them and the supplied cable to connect your monitor to your computer or an amplifier (if either has the right type of jacks).

See page 2 for more detailed illustrations of the jacks' locations.



Refer to the owner's manuals included with your earphones and microphone for a detailed guide to setting up these items.

#### AUTOMATIC POWER SAVINGS & PRESET RESOLUTION MODES

If you have VESA's DPMS compliance display card or software installed in your PC, the monitor can automatically reduce its power consumption when not in use. If input from a keyboard, mouse, or other device is detected, the monitor automatically "wakes up." The table at left shows the power consumption and signalling of this automatic power-saving feature. To turn this feature on and off, see page 12. The table at right shows the 12 factory preset resolution modes. The maximum number of modes is 16. This leaves room for additions.

Power Management Definition

| VESA's mode | Video   | H-sync | V-sync | Power used | Power saving(%) | LED color |
|-------------|---------|--------|--------|------------|-----------------|-----------|
| ON          | Active  | Yes    | Yes    | <130W      | 0%              | Green     |
| Stand-by    | Blanked | No     | Yes    | < 15W      | 87.5%           | Yellow    |
| Suspend     | Blanked | Yes    | No     | < 15W      | 87.5%           | Yellow    |
| OFF         | Blanked | No     | No     | < 5W       | 95.8%           | Amber     |

This monitor is Energy Star compliant and power management compatible.



AS AN ENERGY STAR PARTNER, PHILIPS HAS DETERMINED THAT THIS PRODUCT MEETS THE ENERGY STAR GUIDELINES FOR ENERGY EFFICIENCY.

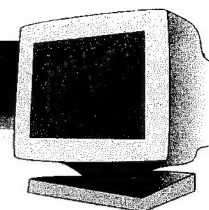
The proper operation of the function requires a computer with VESA DPMS power management capabilities. When used with a computer equipped with VESA DPMS, the monitor is Energy Star compliant.

Factory Preset Resolution Modes

| MODE | RESOLUTION  | H. FREQ. (KHz) | V. FREQ. (Hz) | STANDARD |
|------|-------------|----------------|---------------|----------|
| 1    | 640 x 400   | 31.5           | 70            | VGA      |
| 2    | 640 x 480   | 31.5           | 60            | VGA      |
| 3    | 640 x 480   | 37.5           | 75            | VESA/75  |
| 4    | 800 x 600   | 46.9           | 75            | VESA/75  |
| 5    | 800 x 600   | 53.7           | 85            | VESA/85  |
| 6    | 1024 x 768  | 60             | 75            | VESA/75  |
| 7    | 1024 x 768  | 68.6           | 85            | VESA/85  |
| 8    | 1152 x 870  | 69.0           | 75            | MAC      |
| 9    | 1152 x 900  | 71.8           | 76            | UN SPARC |
| 10   | 1280 x 1024 | 80.0           | 75            | VESA/75  |
| 11   | 1280 x 1024 | 91.0           | 85            | VESA/85  |
| 12   | 1600 x 1200 | 93.8           | 75            | VESA/75  |

## ADDITIONAL INFORMATION

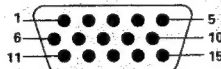
COMING TO TERMS WITH THIS BOOK



### PIN ASSIGNMENT

The 15-pin D-sub connector (male) of the signal cable:

| Pin No. | Assignment                                |
|---------|---|
| 1       | Red video input                           |
| 2       | Green video input                         |
| 3       | Blue video input                          |
| 4       | Identical output<br>- connected to pin 10 |
| 5       | Self test                                 |
| 6       | Red video ground                          |
| 7       | Green video ground                        |
| 8       | Blue video ground                         |
| 9       | No pin                                    |
| 10      | Logic ground                              |
| 11      | Identical output<br>- connected to pin 10 |
| 12      | Serial data line (SDA)                    |
| 13      | H. Sync / H+V                             |
| 14      | V. Sync (VCLK for DDC)                    |
| 15      | Data clock line (SCL)                     |



### SPECIFICATIONS

#### GENERAL

##### CRT

|                           |  |
|---------------------------|--|
| Screen size               | :19" (48.2 cm) flat & square                 |
| Viewable Image Size (VIS) | :17.9"                                       |
| Focusing method           | :Dynamic focus                               |
| Dot pitch                 | :0.22 mm (horizontal)                        |
| Phosphor                  | :P22 or equivalent, medium short persistence |

|                  |        |
|------------------|--------|
| Screen treatment | :Arasc |
|------------------|--------|

##### Display area

|                |                            |
|----------------|----------------------------|
| Factory preset | :340 mm (H) x 255 mm (V)   |
| Maximum usable | :364 mm (H) x 272.5 mm (V) |

##### Scanning frequency

|                   |                       |
|-------------------|-----------------------|
| Horizontal (line) | :30-95kHz (AutoScan)  |
| Vertical (frame)  | :50-160 Hz (AutoScan) |

##### Input power

:100-240 VAC, 50-60 Hz

##### Power consumption

:120 Watt normal, 130 Watt max.

##### Thermal dissipation

:341.3 BTU normal,  
409.5 BTU maximum

##### Input signal

|       |  |
|-------|--|
| Video | :0.7 or 1.0 Vpp, 75 Ohm impedance                      |
| Sync  | :Separate sync. TTL level<br>Composite sync. TTL level |

##### Pedestal

|        |                           |
|--------|---------------------------|
| Tilt   | :5° forward, 11° backward |
| Swivel | :90° left, 90° right      |

##### Physical

|                        |  |
|------------------------|--|
| Unit dimension (WxHxD) | :485 x 490 x 515 mm<br>(19.1" x 19.3" x 20.3") |
| Net weight             | :24.5 kg (53.9 lbs.)                           |

##### Operating conditions

|             |               |
|-------------|---------------|
| Temperature | :0° C - 40° C |
| Humidity    | :10% - 90%    |

##### Storage conditions

|             |                 |
|-------------|-----------------|
| Temperature | :-40° C - 60° C |
| Humidity    | :5% - 95%       |

### INDEX

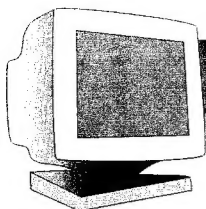
|                         |                  |                             |                  |
|-------------------------|------------------|-----------------------------|------------------|
| Audio Controls          | 3, 14            | On Screen Display           | 2                |
| Automatic Power Saving  | 18               | OSD button                  | 2                |
| Balance                 | 14               | OSD Controls                | 13               |
| Balanced Pincushion     | 15               | Parallelogram               | 15               |
| Bass                    | 14               | Pedestal                    | 2                |
| BNC jacks               | 2                | Photo Retouch               | 8, 9             |
| BNC set up              | 17               | Pin Assignment              | 19               |
| Brightness              | 4                | Pincushion                  | 15               |
| Built-in microphone     | 2                | Power button                | Set Up Guide, 2  |
| Cable Cover             | 2                | Power plug                  | Set Up Guide, 2  |
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| Contrast                | 4                | Resolution Modes            | 18               |
| Corner Correction       | 10               | Right & Left Audio in jacks | 2                |
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| Description of controls | 2, 3             | Rotary knob                 | 2                |
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| DTP                     | 8, 9             | Safety precautions          | 1                |
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| Exit                    | 16               | Special Controls            | 3, 10-13         |
| Features                | 1                | Specifications              | 19               |
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| Hook Ups                | Set Up Guide, 17 | USB hub                     | 2, 17            |
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| Main Controls           | 3, 4-5           | Vertical Position           | 7                |
| Maintenance             | 1                | Vertical Size               | 7                |
| Microphone jacks        | 2, 17            | Video Input                 | 13               |
| Moire                   | 11               | Volume                      | 5                |
| Monitor cable plug      | 2                | Warranty                    | 21               |
| Mute                    | 14               |                             |                  |
| Mute button             | 2, 3             |                             |                  |

### GLOSSARY

Here are a few definitions that may help you.

|               |  |
|---------------|--|
| Degauss       | The process by which metal parts of the monitor are demagnetized in order to reduce screen distortion and color impurity.  |
| D-Sub/<br>BNC | Two ways of connecting your monitor to your computer. Your monitor comes with a D-Sub cable. For work with a heavy emphasis on graphics, a BNC cable is recommended.   |
| Geometry      | A set of controls that allows you to adjust the alignment of the picture on the monitor screen. The goal is to "square up" the picture. This is done by adjusting such items as balanced pincushion, pincushion, parallelogram, rotation, and trapezoid. |
| Moire         | A fringe pattern caused by the interference between two superimposed line patterns.  |
| USB           | Universal Serial Bus. A way to connect your computer, monitor, and peripherals for true Plug-and-Play functions.   |





## ADDITIONAL INFORMATION

### WHAT TO DO IF SOMETHING ISN'T WORKING

#### TROUBLESHOOTING

Having trouble? Something not working? Before calling for help, try these suggestions.

##### HAVING THIS PROBLEM?

No Picture  
(Power LED not lit)

##### CHECK THESE ITEMS

Make sure the Power cable is plugged in the wall and back of the monitor.  
Power button on top of the monitor should be in the ON position.  
Disconnect the monitor from the power outlet for about one minute.

No Picture  
(Power LED is Amber  
or Yellow in color)

Make sure the computer is turned on.  
Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 17.  
Make sure the monitor cable is properly connected to your computer.  
Check to see if the monitor cable has bent pins.  
The Energy Saving Feature may be activated. See pages 12 and 18 for more detail.

No Picture  
(Power LED is Green  
in color)

Make the Brightness and Contrast controls are set correctly. See page 4 for details.  
Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 17.  
Make sure the monitor cable is properly connected to your computer.  
Check to see if the monitor cable has bent pins.  
Make sure the computer Power button is on.

Screen says



when you turn on  
the monitor.

Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 17.  
Make sure the monitor cable is properly connected to your computer. See Setting Up foldout.  
Check to see if the monitor cable has bent pins.  
Make sure the computer is turned on

No Color

If you are using a non-VESA-DDC standard video card, consult your local Philips dealer or service organization to obtain an adapter.

Color appears blotchy

The picture may need degaussing. See page 5 for details.  
Remove any nearby magnetic objects.  
Face the monitor East for best picture quality.

Missing one or  
more colors

Check user settings of Color Temperature. See pages 8 and 9 for details.  
Make sure the monitor cable is properly connected to your computer.  
Check to see if the monitor cable has bent pins.

Dim Picture

Adjust the Brightness and Contrast controls. See page 4 for details.  
Check the Video Input selection and switch from 0.7 volts to 1.0 volts or 1.0 volts to 0.7 volts. See page 13.  
Check your video card and the manual instructions for it. It may be a non-VESA-DDC Standard card.

Picture is too large  
or too small

Adjust the Horizontal and/or Vertical Size. See pages 7 and 8 for details.

Edges of the picture  
are not square

The geometry controls require adjusting. See page 15 for details.

Picture has a double  
image

Eliminate the use of a video extension cable and/or video switch box.  
Face the monitor East for best picture quality.

Picture is not sharp

Check to make sure Moire is switched off. See page 11.

No Audio

Make sure mute is not activated. See pages 2 and 14 for details.  
Rotary Default may be set to Brightness or Contrast. See page 12 for details.  
Make sure the Right & Left Audio in cable is securely plugged into the monitor and the audio source.  
See pages 2 and 18 for details.

Unstable Picture

Increase your refresh rate. Consult your computer manual for details.

Windows '95 cannot  
find your video card

Select "Super VGA" under STANDARD DISPLAY TYPES, or contact your video card manufacturer for the right drivers.

# Setting Up your Philips monitor

Installation de votre moniteur Philips.

Configuración de su monitor Philips.

This foldout is designed to help you use your monitor as soon as possible. Refer to your owner's manual for detailed information. You may also contact us at our web site: <http://www.monitors.be.philips.com>

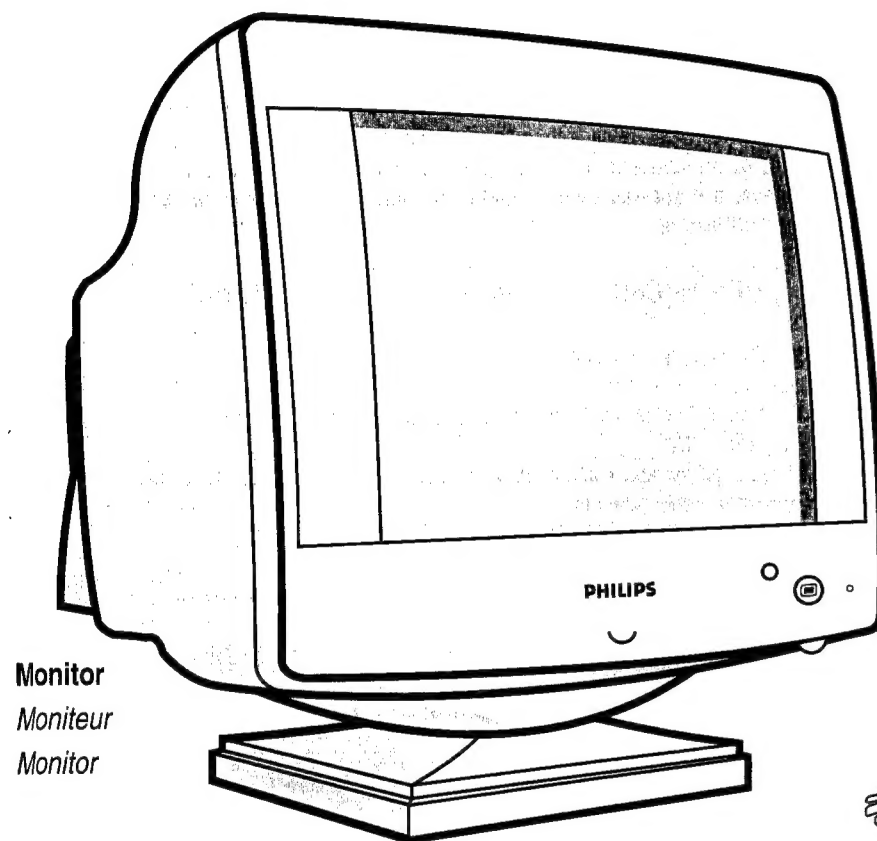
Ce dépliant est conçu pour vous aider à utiliser votre moniteur du plus vite possible. Consulter votre manuel d'utilisateur pour des informations détaillées. Vous pouvez aussi nous contacter sur notre site Web: <http://www.monitors.be.philips.com>

Esta hoja plegable está diseñada para ayudarle a usar su monitor tan pronto como sea posible. Consulte su manual si desea información detallada. También puede comunicarse con nosotros a través de nuestra página web: <http://www.monitors.be.philips.com>

To hook up your monitor to a Macintosh-type computer, follow the steps below. To hook up your monitor to an IBM-compatible computer, follow step 1, then turn over this foldout. In either case, before installing this monitor, please refer to the user's guide of your computer and video adapter to see if this equipment needs any additional setting.

Suivre les étapes suivantes pour connecter votre moniteur à un ordinateur du type Macintosh. Pour connecter votre moniteur à un ordinateur compatible IBM, suivre la première étape, puis tourner ce dépliant. En tout cas, avant l'installation de votre moniteur, veuillez vous référer au manuel d'utilisateur de votre ordinateur et carte vidéo pour voir si cet équipement a besoin d'installation supplémentaire.

Para conectar su monitor a un ordenador tipo Macintosh, siga los pasos que se presentan a continuación. Para conectar su monitor a un ordenador compatible con IBM, siga el paso 1, luego voltee esta página. En ambos casos, antes de instalar este monitor, consulte la guía del usuario de su ordenador y de su adaptador de vídeo, para



Monitor  
Moniteur  
Monitor

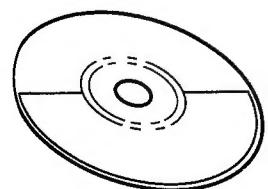
## 1 Unpack all the parts. Déballer toutes les pièces. Desembale todas las piezas.

Monitor cable  
Câble du moniteur  
Cable del monitor

Macintosh adapter (optional)  
Carte Macintosh (optionnelle)  
Adaptador de Macintosh (opcional)

Power cable  
(Appearance may vary.)  
Câble de puissance (l'apparence varie)  
Cable de energía (su aspecto puede variar)

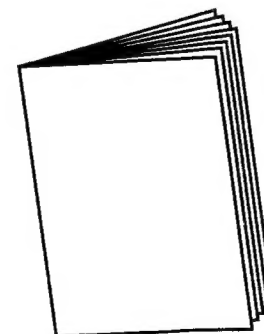
Audio cable  
Câble audio  
Cable de audio



CD ROM or Floppy Disk  
CD-ROM ou Floppy Disk  
CD ROM or Floppy Disk

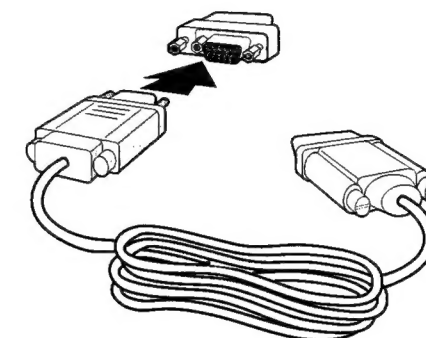


Microphone cable  
Câble du microphone  
Cable del micrófono



Owner's manual  
Manuel d'utilisateur  
Manual del propietario

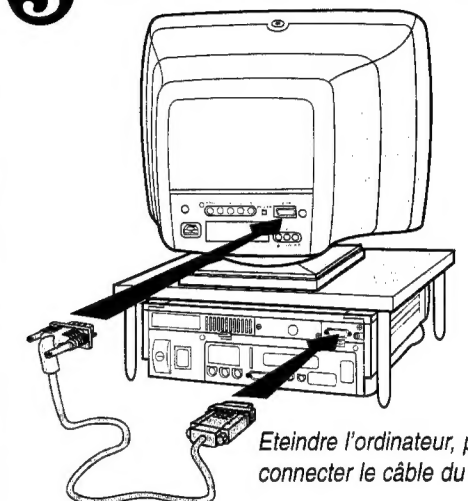
## 2 Connect the special Mac adapter (May not be included.) to one end of the monitor cable.



Connecter la carte spéciale Mac (pas toujours incluse) à une extrémité du câble du moniteur.

Conecte el adaptador especial de Mac (puede no estar incluido) a un extremo del cable del monitor.

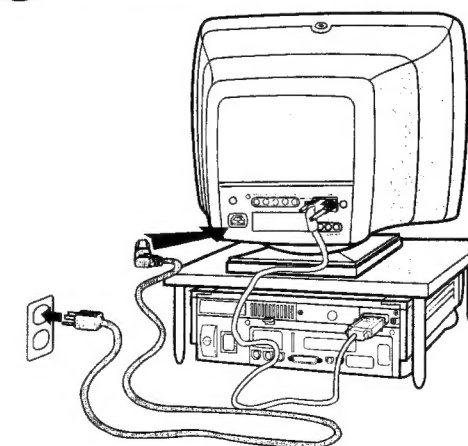
## 3 Turn off the computer. Then connect the monitor cable.



Eteindre l'ordinateur, puis connecter le câble du moniteur

Apague el ordenador. Luego conecte el cable del monitor.

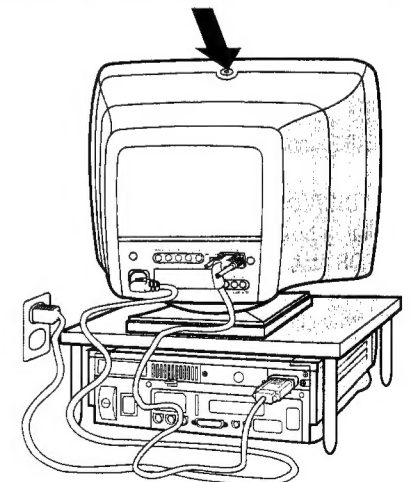
## 4 Connect the power cable. Make sure the power plug and the wall socket are easily accessible.



Connecter le câble de puissance. S'assurer que la fiche secteur et la prise murale soient facilement accessibles.

Conecte el cable de energía. Verifique que se pueda acceder fácilmente al tomacorriente y al enchufe de pared.

## 5 Turn on the monitor. Then turn on the computer.



Allumer le moniteur, puis l'ordinateur.

Encienda el monitor. Luego encienda el ordenador.

# Setting Up your Philips monitor

Installation de votre moniteur Philips.

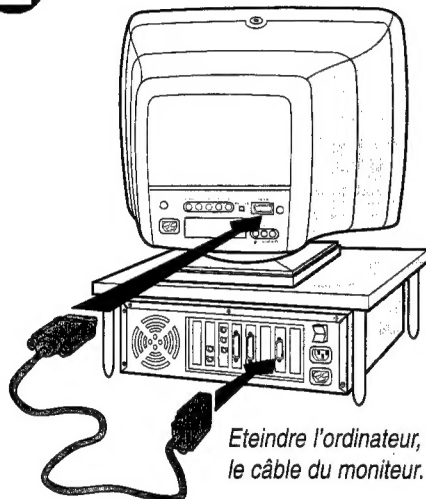
Configuración de su monitor Philips.

IBM-compatible computer hookup continued from step 1 on other side.

Connecter l'ordinateur compatible IBM, suite de la première étape de l'autre côté.

Conexión del ordenador compatible con IBM (continuación del paso 1 del otro lado de la página).

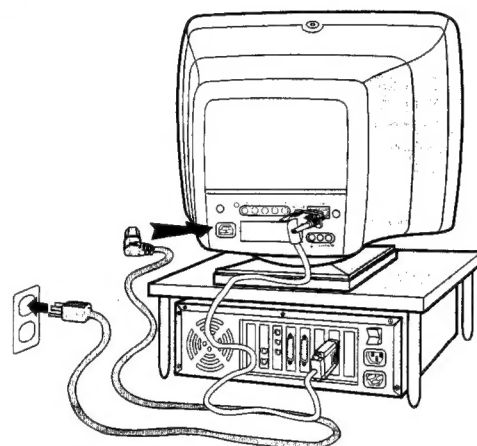
- 2** Turn off the computer. Then connect the monitor cable.



Eteindre l'ordinateur, puis connecter le câble du moniteur.

Apague el ordenador. Luego conecte el cable del monitor.

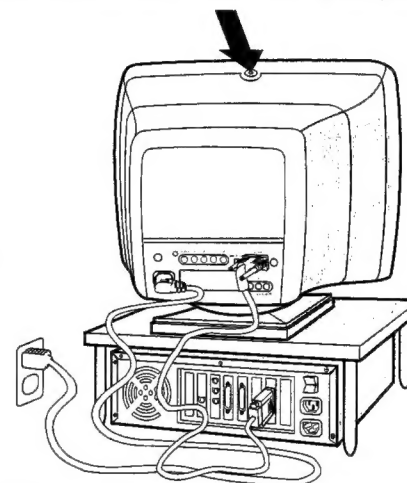
- 3** Connect the power cable. Make sure the power plug and the wall socket are easily accessible.



Connecter le câble de puissance. S'assurer que la fiche secteur et la prise murale soient facilement accessibles.

Conecte el cable de energía. Verifique que se pueda acceder fácilmente al tomacorriente y al enchufe de pared.

- 4** Turn on the monitor. Then turn on the computer.



Allumer le moniteur, puis l'ordinateur.

Encienda el monitor. Luego encienda el ordenador.

## WHAT TO DO IF YOUR MONITOR ISN'T WORKING

Make sure...

- ...the Power cable is plugged in the wall and the rear of the monitor.
- ...the Power button on top of the monitor should be in the ON position.
- ...the monitor cable is properly connected to the back of the monitor and the computer.
- ...to check to see if the monitor cable has bent pins.
- ...the D-Sub/BNC switch on the rear of the monitor is in the correct position.

See pages 2 and 17 of the owner's manual for details.

See page 20 of the owner's manual for troubleshooting tips.

For warranty questions, please see your owner's manual.

## QUE FAIRE SI VOTRE MONITEUR NE MARCHE PAS

S'assurer...

- ...que le câble de puissance soit branché dans le mur et à l'arrière du moniteur.
- ...que le bouton Marche/Arrêt au dessus de votre moniteur soit sur MARCHE.
- ...que le câble du moniteur soit bien connecté à l'arrière du moniteur et de l'ordinateur.
- ...de vérifier que le câble du moniteur n'ait pas de fiches tordues.
- ...que l'interrupteur D-Sub/BNC à l'arrière du moniteur soit en position correcte.

Voir page 24 et 39 de votre manuel d'utilisateur pour plus de détails.

Voir page 42 du manuel d'utilisateur pour des conseils de dépannage.

Si vous avez des questions concernant la garantie, veuillez consulter votre manuel d'utilisateur.

## ¿QUÉ HACER SI SU MONITOR NO FUNCIONA?

Verifique...

- ...si el cable de energía está enchufado a la fuente de energía y a la parte posterior del monitor.
- ...si el botón de alimentación en la parte superior del monitor está en la posición ON.
- ...si el cable del monitor está debidamente conectado a la parte posterior del monitor y del ordenador.
- ...que las clavijas del cable del monitor no estén dobladas.
- ...que el interruptor D-Sub/BNC en la parte posterior del monitor esté en la posición correcta. Si desea más detalles, consulte las páginas 46 y 61 del manual del propietario.

En la página 64 del manual del propietario encontrará consejos sobre la localización de fallas.

Para consultas sobre la garantía, consulte el manual del propietario.

## If you have Windows '95...

follow these steps to complete setting up your monitor.

- Start Windows '95 and install CD ROM supplied with this monitor.
- Click on the "START" icon. Next, click on the "SETTINGS" icon. Then click on "CONTROL PANEL."
- Double-click on "DISPLAY" icon. Next, click on "SETTINGS" tab. Then click on "ADVANCED PROPERTIES" dialog box.
- Click on "MONITOR" tab.
- 5a. If you have an old computer, click on "CHANGE" dialog box. Next, "SELECT DEVICE" screen appears. Now click on "HAVE DISK" dialog box. and select CD-ROM drive  
Or  
5b. If you have a new computer, "SELECT DEVICE" screen automatically appears. Click on "HAVE DISK" dialog box and select CD-ROM drive.
- Select "OK" in the "INSTALL FROM DISK" dialog box. If model name of the Philips monitor is correct, click "OK" tab in the "SELECT DEVICE" dialog box.
- Click "CLOSE" tab in the "ADVANCED PROPERTIES" dialog box. If your Windows '95 version is different or you need more detailed installation information, please refer to the Windows '95 user's manual. **For additional information on the monitor, please refer to the owner's manual.**

## Si vous avez Windows '95...

suivez les étapes suivantes pour terminer l'installation de votre moniteur.

- Démarrer Windows 95 et installer le CD-ROM fourni avec votre moniteur.
- Cliquer sur l'icône "DÉMARRER", ensuite, cliquer sur l'icône "PARAMETRES", puis cliquer sur l'icône "Panneau de configuration".
- Cliquer deux fois sur l'icône "AFFICHER", ensuite cliquer sur l'onglet "PARAMETRES", puis cliquer sur la boîte de dialogue "PROPRIETES AVANCEES".
- Cliquer sur l'onglet "MONITEUR".
- 5a. Si vous avez un ancien ordinateur, cliquer sur la boîte de dialogue "CHANGER". ensuite l'écran "SELECTIONNER UNITE" apparaît. Maintenant cliquer sur la boîte de dialogue "DISQUETTE FOURNIE", et sélectionner le lecteur CD-ROM.  
ou  
5b. Si vous avez un ordinateur récent, l'écran "SELECTIONNER UNITE" apparaît automatiquement. Cliquer sur la boîte de dialogue "DISQUETTE FOURNIE" et sélectionner le lecteur CD-ROM.
- Sélectionner "OK" dans la boîte de dialogue "INSTALLER A PARTIR DE LA DISQUETTE". Si le nom du modèle de moniteur Philips est correct, cliquer sur l'onglet "OK" dans la boîte de dialogue "SELECTIONNER UNITE".
- Cliquer sur l'onglet "FERMER" dans la boîte de dialogue "PROPRIETES AVANCEES". Si votre version Windows 95 est différente ou si vous voulez des informations plus détaillées sur l'installation, veuillez vous référer au manuel d'utilisateur de Windows 95. **Pour des informations complémentaires sur le moniteur, veuillez vous référer au manuel d'utilisateur.**

## Si tiene Windows '95...

siga estos pasos para finalizar la configuración de su monitor.

- Inicie Windows '95 e instale el CD ROM que se suministra con su monitor.
- Haga clic en el icono "INICIO". Luego haga clic en el icono "CONFIGURACIÓN". Luego haga clic en "PANEL DE CONTROL".
- Haga doble clic en el icono "PANTALLA". A continuación haga clic en la etiqueta "CONFIGURACIÓN" y luego en el cuadro de diálogo "PROPIEDADES AVANZADAS".
- Haga clic en la etiqueta "MONITOR".
- 5a. Si usted tiene un ordenador viejo, haga clic en el cuadro de diálogo "CAMBIAR". Luego aparece la pantalla "SELECCIÓN DE DISPOSITIVO". Ahora haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad CD-ROM.  
O  
5b. Si tiene un ordenador nuevo, aparece automáticamente la pantalla "SELECCIONAR DISPOSITIVO". Haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad CD-ROM.
- Seleccione "ACEPTAR" en el cuadro de diálogo "INSTALAR DESDE DISCO". Si el nombre del modelo del monitor Philips está correcto, haga clic en la etiqueta "ACEPTAR" del cuadro de diálogo "SELECCIÓN DE DISPOSITIVO".
- Haga clic en la etiqueta "CERRAR" del cuadro de diálogo "PROPIEDADES AVANZADAS". Si su versión de Windows '95 es diferente o necesita información más detallada acerca de la instalación, consulte el manual del usuario de Windows '95. **Si desea información adicional acerca del monitor, consulte el manual del propietario.**